

University of Dundee

Drug deaths in Tayside, Scotland 2010

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DRUG DEATHS IN TAYSIDE, SCOTLAND

2010

**A report on the findings of the Tayside Drug
Deaths Review and Working Groups**

**(Angus, Dundee City, and Perth and Kinross
Alcohol and Drug Partnerships)**

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Contents

	<i>Page</i>
Executive Summary	1
Case Vignette: A Typical Drug Death Victim in Tayside	1
Background	2
Drug Deaths in Tayside 2010: Key Points	2
Recommendations	6
Section 1 Introduction	7
1.1 Background	7
1.2 Aim	7
1.3 Working Arrangement	7
1.4 Governance and Structure	8
1.5 Audit	10
Section 2 Methodology	11
2.1 Population	11
2.2 Definition of a Drug Death (DD)	11
2.3 Inclusion Criteria: ICD-10	12
2.4 Exclusion Criteria	12
2.5 Step by Step: Information Gathering	13
2.6 Step by Step: Guide to Data Collection	14
2.7 Protocol and The Drug Deaths Database	15
2.8 Drug Deaths Database	15
2.9 Data Analysis	15
2.10 Data Collection Sources	16
2.11 Missing Data	16
2.12 Format of Results	17
Section 3 Results	18
3.1 Demographic Characteristics	18
3.1.1 Incidence and Prevalence	18
3.1.2 Residency of Drug Deaths in within Tayside Council Areas	19
3.1.3 Gender and Ethnicity	20
3.1.4 Age	21
3.2 Life Context and Social Functioning	22
3.2.1 Housing and Living Arrangements	22
3.2.2 Relationship and Family Information	23
3.2.3 Relationship with Children	24
3.2.4 Friendships and Relationships	24
3.2.5 Education and Employment	25
3.2.6 Employment Status at the Time of Death	26
3.3 Criminal Justice and Offending	27
3.3.1 History of Offending	27
3.3.2 History of Incarcerations	27
3.3.3 History of Court Enforced Interventions	28
3.4 Physical/Psychological Health	29
3.4.1 Psychiatric/Psychological Problems	29

3.4.2	Physical Health Problems	29
3.4.3	Significant Life Events	30
3.4.4	Co-morbidity	31
3.5	Substance Misuse Histories	32
3.5.1	Age at which Drug Misuse Began	32
3.5.2	Lifetime Injecting Characteristics	32
3.5.3	Drug Use Characteristics of Injecting vs. Non-Injecting Users	33
3.5.4	Overdose Histories	33
3.6	Service Use Histories	34
3.6.1	Services Accessed within 5 years of Death	34
3.6.2	Services Accessed within 6 month of Death	35
3.6.3	Pharmacological Interventions	35
3.7	Circumstances of Death	37
3.7.1	Timings of Death	37
3.7.2	Circumstances of Death	38
3.7.3	Snoring Immediately Prior to Death	38
3.7.4	Interventions Attempted at the Scene	39
3.8	Toxicology Results of Drug Deaths	40
3.8.1	Toxicology Results	40
3.8.2	Substances Implicated Concomitantly	41
3.8.3	Therapeutic, Fatal and Actual Levels of Substances	42
3.9	Pharmacology of Heroin in Tayside	43
3.9.1	Purity Levels of Heroin	43
3.9.2	Cutting Agents	43

Section 4	Key findings from the national drug deaths report and comparisons with local data	44
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Section 5	Conclusions and recommendations	50
5.1	Case vignette-potential impact of interventions	52

Appendix	A	Tayside Drug Death Questionnaire	54
	B	Tayside Drug Death Action Plan 2011	82
	C	Tayside ADPs Directory of Services	88
	D	Recommendations of the National Forum on Drug-related Deaths	89

Executive Summary

Case Vignette: A Typical Drug Death Victim in Tayside 2010

The average Drug Death victim from Tayside would be a White Caucasian 34 year old male who lived in Dundee. He would have started his substance misuse at the age of 15 years; around that time he would also have left school. He would have gained employment or started an apprenticeship. His childhood may have been disrupted; he might have had a family history of psychiatric difficulties and/or substance misuse. He may have suffered physical/sexual abuse and/or spent some time in care.

From the age of 16 years onwards, he would have proceeded to misuse a cocktail of drugs including cannabis, amphetamines, LSD and ecstasy. Approximately 4 years after leaving school he would have started taking heroin. He would have started injecting at around 21 years of age. He would have maintained meaningful and close relationships with his friends and family members throughout his life. He would have had children; however, they would not have lived with him and he would have lost custody of them.

He would have been known to at least 2 services, intermittently, including his GP, social work services and specialist substance misuse services in Tayside during the 5 years prior to his death. In this time he would have been misusing several types of substances including heroin and benzodiazepines (prescribed and/ or non-prescribed). He would also have encountered at least one complex episode of a co-morbid psychiatric or physical health problem. He would also have experienced other adverse life events, such as bereavement and the loss of a close relationship. At some point in his life, he would have suffered a non-fatal drug overdose. He would have criminal record and have served a prison sentence some point during his life.

At the time of his death, he would be unemployed, living alone or living with other adults and would not have changed accommodation type during those 6 months. He would have been classed as single, but may have been in a volatile, on/off relationship at this time. He would have been close to friends and family members and so would not have been socially isolated. During this time he would have been known to GP but would not have sought or received pharmacological treatment for his drug dependency. During this time, he would be misusing a cocktail of illicit and prescribed substances.

On the day of this death he would have purchased at least one 'tenner' bag of heroin alongside benzodiazepines. He would have shared these amongst friends/co-users and injected in the presence of them. He would have died in the presence of others and would have been believed to be sleeping and any attempts to revive him would therefore have been delayed. Any means of formal resuscitation such as CPR, would have been only conducted when instructed to do so by the ambulance, and would usually be partial in nature. He would have died at his resident home address, most likely on a weekday.

At post mortem his blood sample would have revealed a cocktail of depressants such as morphine, benzodiazepines, and/or methadone as well as anti-depressant medication. His cause of death would most likely have been classed as "Adverse Effects of Heroin".

Background

Aims and Objectives

The principal aims of the report included data collection and analysis pertaining to the demographic, social, criminal offending, substance misuse, physical, psychiatric/psychological and service use characteristics as well as the specific circumstances of drug deaths in the Tayside area. Consequently, findings have enabled the groups to set forth recommendations to facilitate the reduction of drug deaths and inform policy and practice at a local and national level.

Methods

The population of drug deaths (DDs) in Tayside in 2010 consisted 33 cases. Information about these deaths was collected via dissemination of the Fife and Tayside Drug Deaths Questionnaire (see Appendix A) and/or case notes held by social care services, specialist addiction services, general practice, prison and police services e.g. Scottish Criminal Records Office (SCRO). Data relating to the specific cause of death, post-mortem and toxicology was obtained from the Procurator Fiscal offices in Tayside. Any recent Social Enquiry Reports are provided by Criminal Justice Services.

Key Results

Incidence and Prevalence of Drug Deaths

- Tayside had a total of 33 drug deaths in 2010
- Drug related death cases are not officially recorded
- There has been a reduction in the number of drug deaths in Tayside, from 0.106 per 1000 in 2009 to 0.083 per 1000 in 2010.
- The average drug death rate in Tayside in 2010 (0.083 per 1000) was slightly lower than the 2005-2009 Scottish average rate of 0.09 per 1000
- Most drug deaths in Tayside occurred in Dundee

Demographic, Social Functioning and Life Context Trends

- 100% of Tayside drug death victims were White Caucasian
- 72.7% of Tayside drug death victims were male
- The mean age of the drug deaths victim in 2009 was 34 years
- Drug death victims were aged between 15 and 56 years, with a relatively even spread between those ages
- The majority (55%) of drug death victims were living with others at the time of their deaths
- The living arrangements of the drug deaths victims at the time of their deaths did not differ much from those of the six months prior to death, except in those cases where the person had been incarcerated during that time or had a change in relationship status
- While the majority (88%) of drug death victims were classed as single, separated, divorced or widowed at the time of their deaths, a large number were involved in some form of intimate relationship at the time of their deaths
- Almost half (45%) of drug death victims had children; however, 93.3% of these did not live with their children

- The majority of drug death victims were not socially isolated; many were known to have a close relationship with a family member (83.8%) or a close friendship with another person (76%)
- At the same time, at least 30.3% were known to also have significant difficulties in these relationships
- The mean age at which drug death victims left school was 15.35 years
- The majority of drug death victims (75%) were engaged in some form employment/education activity after leaving school
- Only 25% were unemployed after leaving school. However this figure was reversed directly before death, at which point 93.7% of drug death victims were unemployed.

Criminal Justice Issues and Offending Patterns

- 81.8% of drug death victims had been convicted of a crime at some point in their lives
- 29.6% of drug death victims who had been arrested, were arrested at least once 6 months prior to their death
- 66.6% of drug death victims had served a prison sentence some point during their lives
- 27.2% of drug death victims who had served a prison sentence had done so in the 12 months before their death
- None of the victims died within 2 weeks of release from prison
- Few drug death victims were subject to court enforced interventions

Physical, Psychological/Psychiatric Health and Significant Life Events

- The majority of drug death victims (69.7%) suffered from psychological or psychiatric difficulties, the most common of which was depression
- 51.5% of the drug death victims were known to have suffered significant physical difficulties
- 75.8% of drug death victims were known to have experienced a significant adverse event in their adult lives and 36.4% had experienced adversity in childhood
- Most common adverse life events included separations, bereavements, and assault/physical abuse
- The majority of drug death victims (72.7%) had experienced a combination of psychological and physical difficulties as well as life events, rather than a single problem alongside their substance misuse problems

Substance Misuse Histories

- The vast majority of the drug death victims were known poly-drug users, 72.7% of which were IV users
- The average age at which drug misuse began was 16.3 years, and age at which individuals first injected was 21.4 years
- By the time of their deaths, the victims had an average drug using career of almost 17 years
- While injecting drug-users were relatively more likely than non-injecting users to die of an overdose that involved morphine, the non-injectors were relatively more likely to die of an overdose involving methadone
- 57.5% were known to have overdosed at some point in their lives, often on multiple occasions

- 36.3% victims were known to have overdosed in the 12 months prior to their deaths

Service Use Histories

- All drug death victims were known to at least one service in the 5 years prior to their deaths
- 84.8% of all drug death victims had accessed at least one service in the 6 months prior to their deaths
- General Practitioners and NHS Tayside Substance Misuse Services were the most commonly accessed services
- A large proportion (69.7%) of drug death victims did not seek/receive treatment for their drug problem 6 months before they died
- 30.3% were receiving pharmacological treatment in the 6 months prior to their death; most were prescribed methadone
- All of these individuals (30.3%) were still on a methadone programme at the time of their deaths

Circumstances of the Death

- Drug deaths in 2010 in Tayside occurred at a relatively even rate over the course of the year
- Overall, drug deaths were relatively more likely to occur during a week than over a weekend
- Drug deaths which occurred over the weekend were no more likely to involve alcohol than those occurring during the week
- The majority of drug deaths (57.6%) occurred in the presence of others, which were in all cases known to the victim
- In many cases where others were present, the victim was simply believed to be sleeping at the time of their death, thus delaying any possible interventions
- CPR was attempted by bystanders in the majority of cases (57.9%); however, this was often partial and had to be instructed by the ambulance crew over the telephone

Toxicology Findings

- Benzodiazepines, Heroin/Morphine, Methadone and Anti-depressants were the four most common substances involved in the drug deaths of 2010
- 82.2% of victims had taken benzodiazepines shortly before their death
- Methadone was involved in 50% of all drug deaths in Tayside in 2010; half of these individuals had not been prescribed the medication
- All of the drug deaths occurring in Tayside involved a lethal combination of two or more substances
- The “therapeutic” and “fatal” ranges of a substance (as used in the toxicology reports) are diffused in their meaning, in light of these poly-substance deaths

Pharmacology of Heroin in Tayside

- There is wide variation in the purity of seized heroin in Tayside, in common with the rest of Scotland

- There was a downward trend in the purity of heroin recovered in Tayside during the second half of 2010 and early 2011
- Caffeine and paracetamol are the most commonly detected cutting agents

2009 drug deaths and 2010 drug deaths

There are a number of noteworthy comparisons between the findings of the 2009 Tayside drug deaths report and the 2010 report. With the relatively small numbers of cases in sub-set analysis, and taking into account that the dataset only covers 2 years, it is not appropriate to draw specific conclusions from these data at this point. A collated 3 year report will be produced in 2010, and further information may be obtained by looking at the reports from neighbouring Board areas using the same questionnaire (Fife and Forth Valley). The drug deaths working group will review findings from all 3 areas in the coming months.

- The overall number of drug deaths fell, from 42 confirmed in the 2009 report, to 33 confirmed in the 2010 report
- Amongst those who had ever been arrested, there was a reduction in the proportion who had been arrested within the 6 months prior to their death, from 50% in 2009 (15 of 30) to 30% in 2010 (8 of 27)
- None of those who died in 2010 had been in prison within the previous 2 weeks, whereas in 2009, 16% (3) of those who died were within 2 weeks of release from prison
- In both years, cases were reported to have begun to misuse drugs around the age of 16, progressing over some years from cannabis and stimulant use to opiates at around the age of 19/20 years, with injecting beginning in the early 20's
- In both years, a similar proportion of people were receiving prescribed methadone in the 6 months prior to death- 24% in 2009 and 27% in 2010
- In 2009 there was a trend for more drug deaths to occur on Friday, Saturday and Sunday compared with the rest of the week. No such trend was apparent in 2010
- In both years, benzodiazepines and heroin/morphine were the most commonly detected substances on toxicological analysis
- Methadone was detected in 25% of toxicological analyses in 2009, and in more than three-quarters of these cases, the individual was on a methadone prescription. In 2010, methadone was reported in 50% of cases, and only half of these were in receipt of a methadone prescription at the time of death
- In 2009, antidepressants were detected in 17% of cases: in the 2010 cohort this had risen to 50%
- Alcohol was detected in 42% of toxicological analyses in 2009, and in 14% in 2010

Recommendations

Tayside Drug deaths Working Group has formulated an action plan that details specific responses to be undertaken by the Working Group, alongside prioritised recommendations for strategic and operational partner agencies (Appendix B). The findings of this 2010 Annual Report on drug deaths in Tayside supports the recommendations within that action plan, and these will be taken forward over the coming 12 months. The Tayside ADPs have accepted the workplan of the Drug Deaths Working Group. Recommendations for partner agencies will be taken through relevant structures for discussion.

Section 1: Introduction

1.1 Background

The National Investigation into Drug Related Deaths (DRD) (2005) commissioned by the Scottish Executive and conducted by the Centre for Addiction Research and Education Scotland (CARES) examined the social, clinical circumstances and service contacts of those dying as a result of a drug related death in Scotland in 2003. This investigation and subsequent Scottish Advisory Committee on Drug Misuse (SACDM) report and recommendations (2005) identified the need to establish a local standing Drug Deaths Monitoring and Prevention Group that involved key agencies to reduce deaths under the auspices of local Alcohol and Drug Partnerships (ADPs). The Tayside Drug Death review and working groups were set up in 2008 with the aim of understanding and preventing drug deaths.

The National Drug Deaths Database was also launched in January 2009, acting on a recommendation that had come from the National Forum for Drug Related Deaths. Data collected for local analysis is also reported to the national database. The first annual report of the National Drug Deaths Database was published in December 2010, reporting on drug deaths that occurred in 2009. A summary of the findings of this report, and comparisons with the local dataset are presented in section 4.

1.2 Aim

To work collaboratively to reduce the number of drug deaths across Tayside and also to improve the response to non-fatal overdoses of drugs of misuse.

1.3 Working Arrangement

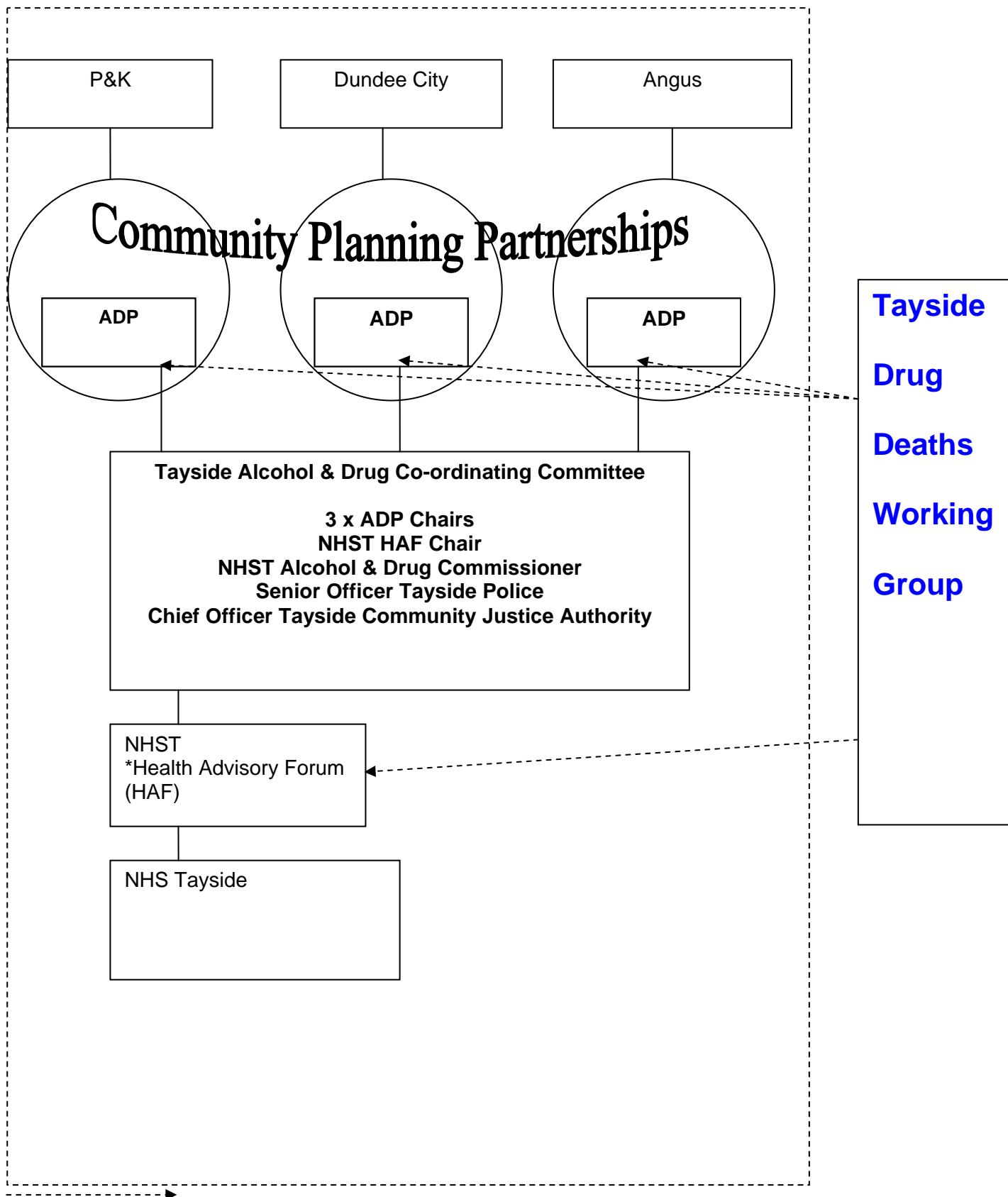
The approach taken is modelled on that established in Fife. There are two principal functions to be undertaken. The first is to determine common demographic, social, criminal offending, substance misuse, physical, psychiatric/psychological, service use characteristics and circumstances of drug deaths. This is accomplished through the dissemination of an in-depth questionnaire (Appendix A) to all agencies outlined in the Tayside ADP Directory of Services (Appendix C), as well as Prison Services (SPS). All services are notified of a suspected drug death, and are asked to provide information about those individuals that they have had contact with. Primary Care records for each individual are also obtained, alongside police sudden death reports, post-mortem and toxicology reports. This information is collated and considered by the Review Group, which aims to draw lessons from each individual case. The second function is to use the information gathered, to draw upon trends, similarities, key themes, and strategic issues to be formulated. This is the prime role of the Working Group. Thus, in line with national recommendations, the work of these two groups endeavours to inform and disseminate good practice, and enhance the provision of care to reduce the growing number of drug deaths in Tayside. Members of the Review and Working Groups are detailed in the Acknowledgements.

The Overdose (OD) Prevention Subgroup has been set up to improve the response in Tayside to non-fatal overdoses and to develop proposals and recommendations for such a response on behalf of the Working Group. An OD Prevention training programme has been developed by the group, and is being delivered in partnership with Scottish Drugs

Form. The group has responsibility to co-ordinate the OD Prevention training programme for service users, carers and front-line staff.

1.4 Governance and Structure

The Tayside Drug Death Groups operate in an environment where there are three Alcohol and Drugs Partnerships (ADPs), and three Community Planning Partnerships (CPPs), covering Angus, Dundee City and Perth and Kinross. The ADPs are the key strategic partnership group for substance misuse within each local area, and they are expected to have strong links with the wider CPPs. ADPs have only been in existence since late 2009; prior to this their role was played by DAATs. The Drug Deaths Group acts as an expert reference group to the 3 ADPs, making recommendations to the ADPs for them to take forward in conjunction with the wider CPP. The high level structures are illustrated in the Figure. The Drug Deaths Working Group maintains a close relationship with the Health Advisory Forum which allows a direct line of communication to those centrally involved in the planning and delivery of NHS substance misuse services.



Drug Deaths Working group expert advisory relationships

* In Tayside, the Health Advisory Forum brings together NHS professionals involved in services for people with substance misuse problems, alongside representatives of the ADPs.

1.5 Audit

An audit of the questionnaire and the database was undertaken in 2010. Key recommendations and the responses that have been made are shown in the table. A re-audit will be undertaken in 2012.

Audit recommendation	Response
A data dictionary is required to ensure consistency of data entry as the database is expanded and in order to allow for continuity in case of staff requiring cover, or changes in roles.	This action still requires to be progressed
The current system for collecting data requires review to ensure that data collection is adequate and timely. A degree of lag is expected as this is a new database and most agencies have yet to make data recording a part of daily business.	Data collection will be continually monitored and the proportion of returns within 8 weeks reported back to ADPs.
A change to the system of notification of a sudden death by the police may be required to ensure that this system is robust and accurate and avoids duplication of effort	The system has been changed to improve the rapidity of reporting of deaths and also ensure completeness. The system now also has some redundancy so that periods of absence of the prime reporting agent are covered.
The drug related deaths committee may need to consider adding a field for current chronic illness such as HIV, Hep C, Asthma etc.	Chronic illness is recorded in the database
Future audits should target the collection of data over a longer term and during a "routine" year. The introduction of a novel system which happened to overlap with the H1N1 flu pandemic may have contributed to many of the problems with timeliness of data collection.	The database will be re-audited in 2012

Section 2: Methodology

This report is a retrospective analysis of trends, similarities and common themes occurring within victims of drug deaths in Tayside over the past year (2010). Information has been analysed from a descriptive perspective and does not infer that the data collated necessarily identifies risk factors attributable to a drug death. In order to accomplish such a task one would require a controlled sample of a living, drug taking and general population.

2.1 Population

In total, there were 33 individuals who died as a result of a drug death (n = 33) in Tayside in 2010. Cases for the study were a consecutive sample of individuals who died from drug overdose in the Tayside area between January and December 2010. Of these 33 fatalities, 28 have been confirmed of dying from a fatal drug overdose by post-mortem toxicology reports obtained from the Procurator Fiscal offices in Tayside. A further two individuals included in the sample died as the result of an Anthrax infection due to the injection of contaminated heroin. At the time of writing this report, toxicology was still outstanding for the remaining three cases. However, the circumstances of these deaths were considered by the Tayside Drug Deaths Review Group and it was subsequently decided that they should be included in the present report.

2.2 Definition of a Drug Death (DD)

The definition of a Drug Death (DD) is complex, with individual studies adopting specific definitions, which vary depending upon the focus of the study. The Scottish Criminal Drugs Enforcement Agency (SCDEA) defines a drug death as:

‘Where there is prima facie evidence of a fatal overdose of controlled drugs. Such evidence may be recent drug misuse, for example controlled drugs and/or a hypodermic syringe found in close proximity to the body and/or the person is known to the police as a drug misuser although not necessarily a notified addict.’

The complexity of providing a suitable DD definition is demonstrated by the differences in definitions incorporated by different organisations. For example, the World Health Organisation (WHO) defines it as ‘fatal consequences of the abuse of internationally controlled substances and/or of non medical use of other substances for psychic effects,’ (WHO, 1993; p7). This definition allows the incorporation of deaths indirectly associated with drug abuse, which would be excluded by the SCDEA, such as chronic intoxication, suicide, drug abuse-related accidents and drug-abuse related diseases.

This definition is similar, but not identical, to the definition employed by the General Register Office for Scotland (GROS). The GROS definition includes instances in which toxicological findings indicate the presence of a controlled substance, but where this substance may not necessarily have been a factor contributing to the individual’s death.

Any deaths resulting from the overdose of a controlled substance in the year 2010 have been included and considered in this report.

The Inclusion/Exclusion criteria presented below incorporates the ICD-10 codes used by various national Drug Related Deaths investigations, e.g. GROS, 2008 and The National Investigations into Drug Related Deaths 2003 (Zador et al., 2005) and Drug Misuse

Statistics Scotland (ISD, 2008). Subsequently, the Drug Death Review Group conforms to this definition of a DD.

2.3 Inclusion Criteria: ICD-10

Drug Deaths, where the underlying cause of death has been coded to the following sub-categories of 'mental and behavioural disorders due to psychoactive substance use';

a)

- (i) opioids (F11)
- (ii) cannabinoids (F12)
- (iii) sedatives or hypnotics (F13)
- (iv) cocaine (F14)
- (v) other stimulants, including caffeine (F15)
- (vi) hallucinogens (F16); and
- (vii) multiple drug use and use of other psychoactive substances (F19)

b) Deaths coded to the following categories and where a drug listed under the Misuse of Drugs Act (1971) was known to be present in the body at the time of death:

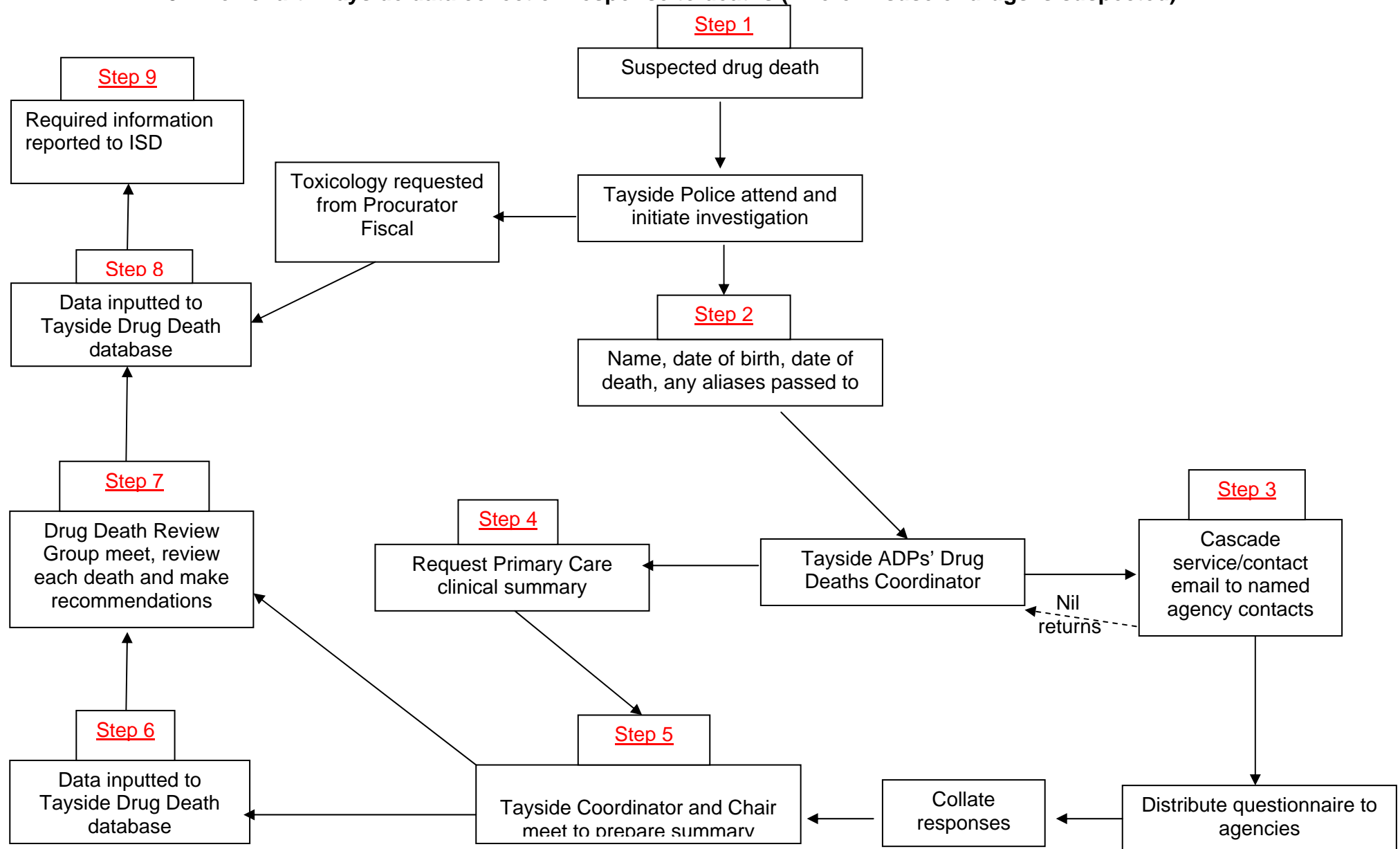
- (i) accidental poisoning (X40-X44);
- (i) intentional self-poisoning by drugs, medicaments and biological substances (X60—X64);
- (ii) assault by drugs, medicaments and biological substances (X85) and
- (iii) event of undetermined intent, poisoning (Y10-Y14)

2.4 Exclusion Criteria

- (a) deaths coded to mental and behavioural disorders due to the use of alcohol (F10), tobacco (F17) and volatile substances (F18)
- (b) deaths coded to drug abuse which were caused by secondary infections and related complications (e.g. septicaemia)
- (c) deaths from AIDS where the risk factor was believed to be the sharing of needles;
- (d) deaths where a drug listed under the Misuse of Drugs Act was present because it was part of a compound analgesic or cold remedy, e.g.:
 - Co-proxamol: Paracetamol, dextropropoxyphene
 - Co-dydramol: Paracetamol, Dihydrocodeine
 - Co-codamol: Paracetamol, codeine sulphate

All three of these compound analgesics have, particularly co-proxamol, been used in suicidal overdoses.

2.5: Flowchart –Tayside data collection response to deaths (where misuse of drugs is suspected)



2.6 Step-by-step Guide to Data Collection

Step 1.

A suspected Drugs Death occurs in Tayside and police attend and carry out investigation into the circumstances surrounding the death. The length of the investigation depends upon the individual circumstances and can vary from a few days to a number of months.

Step 2.

Police inform the NHS Tayside Drug Deaths Co-ordinator, who in turn disseminates the Tayside Drug Death Questionnaire (Appendix A) to all relevant agencies for completion. At this point, Tayside Police also request toxicology from the Procurator Fiscal.

Step 3.

Agencies check records to see if the individual has accessed their respective services. If the individual is known to a particular agency, the Drug Death Questionnaire is completed by that agency and returned to the Drug Deaths Co-ordinator at NHS Tayside for the attention of the Drug Death Review Group.

Step 4.

Police inform NHS Tayside of the victim's GP details and the GP notes are requested on behalf of the Drug Deaths Review Group.

Step 5.

GP notes and questionnaires are collated and the Chair and Coordinator produce a summary for each case for discussion at the Review Group.

Step 6.

All questionnaires, case notes and post-mortem/toxicology reports are sent to FPHQ where details are entered into the DD Database.

Step 7.

The Tayside Drug Death Review Group meets to discuss each death and make recommendations. The group meet every eight weeks.

Step 8.

All information is finalised in the Tayside Drug Death Database.

Step 9.

The Drug Death Researcher, on behalf of the Tayside Drug Death Review Group, reports each Drug Death, alongside all the detail required of the death, to ISD within 8 weeks of the death.

2.7 Protocol and Creation of the Drug Deaths Database

The template utilised in creating the Fife and Tayside and Forth Valley Drug Deaths (DD) Database was formed from a combination of the Centre for Addiction Research and Education Scotland (CARES) questionnaire used in the Scottish Executives National Investigation into Drug Related Deaths in Scotland in 2003 (2005) and extracts from the Scottish Criminal Drug Enforcement Agency (SCDEA) questionnaire. The questionnaire contains the following domains:

1. Demographic Characteristics
2. Life Context and Social Functioning
3. Criminal Justice Issues and Offending History
4. Substances Use History
5. Physical and Psychological Health
6. Service Provisions
7. Additional information

The questionnaire is updated when required, and in 2010 a new version of the questionnaire was adapted (Appendix A). This questionnaire is disseminated to all relevant agencies concerned in the provision of care or services to the drug death victim (e.g. CJS, TSMS). Upon completion, the questionnaire(s) are returned to the committee and information pertaining to the domains outlined above is entered into the database. In order to adhere to data protection principles, data is anonymised where possible, and coded accordingly. The database is securely held on a stand-alone machine and housed within the Fife Police Headquarters. All governance and data-sharing between the statutory and non-statutory agencies in Tayside (known as the 'gold standard') have been formalised and approved.

2.8 Drug Deaths Database

The main source of information for the current report was the Tayside Drugs Death Database (EXCEL/SPSS), which holds all data on Drugs Deaths that have occurred within the Tayside area since January 2009.

2.9 Data Analysis

For the purposes of the present report, data contained within the Drug Deaths Database was collated by one researcher. The data analysis presented in the current report is limited to descriptive statistics. The researcher is supervised by the Chairperson of the DD group. The process of data collection and analysis broadly involved the following stages:

1. Maintenance of the database on a regular basis, entering of new information and regular cleansing of existing data
2. Background research on past/current government directives and relevant literature
3. Extraction of relevant data pertaining to the seven domains of the questionnaire outlines above
4. Data analysis (via Excel/SPSS) and interpretation/synthesis
5. Presentation of results

2.10 Data Collection Sources

Outlined below are lifestyle domains and sources used in data collection:

Domain	Sources Used
1. Demographic Characteristics	- Sudden Death Report - Drug Death Questionnaire
2. Life Context and Social Functioning	- Sudden Death Report - Social Work Notes, Social Enquiry - Criminal Justice Service Reports - Psychiatric Reports - GP Notes and Correspondences - Drug Death Questionnaire
3. Criminal Justice and Offending	- CHS (Criminal History System) - Sudden Death Report - Post-Mortem/Toxicology Reports - Drug Death Questionnaire
4. Substance Use History And	- Sudden Death Report - GP Notes and Correspondences
5. Physical and Psychological Health	- TSMS Notes - Psychiatric Reports - Social Work Notes - Drug Death Questionnaire
6. Service Use History	All of the above sources
7. Additional Information	All of the above sources

2.11 Missing Data

The committee are aware of and adhere to the policy regarding restricted access. Therefore, whilst current regional socio-demographic trends/figures for Drug Deaths in Scotland (SCDEA, 2009) were obtained and analysed, they are not contained within the present report. Conversely, some information pertaining to the life domains outlined in the questionnaire was not available for analysis because it did not exist consistently in the case notes e.g. school leaving age.

The availability/lack of information for all cases is stated clearly throughout the content of this report and it is noted that use of multiple sources may reflect variations in the data obtained. However, the availability of additional sources such as the Fife and Tayside Drug Death Questionnaire and access to GP notes has enabled the DD group to maximise the insight into the established life domains of the DD victims of 2010. Indeed, the DD group acknowledge this as part of an ongoing aim, rather than a limitation, whereby the aim is to continue to synthesise information from multiple sources and develop a systematic approach in identifying the lifestyle patterns of DD victims.

2.12 Format of Results

The results of the present report are, as previously stated, analysed from a descriptive perspective and are then compared and contrasted to drug deaths at a Scottish national and UK-wide level. For the purpose of clarity, the structure of the present report does not directly reflect the layout of the Fife and Tayside Drug Death Questionnaire; instead, the results section (Section 3) is divided into the following series of sub-sections:

- 1 - Demographic Characteristics
- 2 - Life Context and Social Functioning
- 3 - Criminal Justice and Offending
- 4 - Physical, Psychological/Psychiatric Health and Significant Life Events
- 5 - Substance Misuse Histories
- 6 - Service Use Histories
- 7 - Circumstances of the Deaths
- 8 - Toxicology Results
- 9 - Pharmacology of Heroin in Tayside

Section 3: Results

3.1 Demographic Characteristics

This section describes patterns surrounding the incidence and location of drug deaths. It also considers gender, age and ethnicity of drug death victims.

3.1.1 Incidence and Prevalence of Drug Deaths

In 2010 the Tayside Drug Death Review Group reviewed 34 cases including drug related, non-drug related and drug deaths cases. All of these 34 cases were discussed and reviewed in clusters, which enabled the group to focus on the individual circumstances surrounding each death.

The group's definition of a drug death considers those deaths that are directly attributable to the overdose of an illicit substance and not the broader scale of deaths including deaths from accidental injury, blood borne viruses and suicides, which are classed as drug related deaths.

Toxicology reports and discussions identified one case which did not conform to the group's definition of a drug death, and which was therefore excluded from further analyses. However, this excluded death should in no way be taken as an indication of the full number of drug **related** deaths in Tayside in 2010.

Of the remaining 33 cases, three were not yet confirmed as drug deaths at the time of writing this report. However, the circumstances of these deaths were reviewed by the group, and were taken as sufficient evidence that these deaths were in fact drug deaths to include them in the demographic section of the present report. The drug death review group confirmed 42 cases in its 2009 report.

At the time of writing this report, complete data was available for all 33 drug deaths which occurred in Tayside between January and December 2010.

Key Points

- Tayside drug deaths review group confirmed a total of 33 Drug Deaths in 2010, compared with 42 in 2009
- Drug related death cases are not officially recorded

3.1.2 Residency of DD victims within Tayside

The resident council area of DD victims in Tayside during 2010 are displayed in Table 1 below.

Table 1: DD Victims Council Areas of Residency 2010 (n = 33)

Council Area	Number of DDs
Dundee	20
Angus	10
Perth & Kinross	3

The majority of DDs in 2010 occurred in the victim's own homes. Of the 33 individuals who died, 22 (66%) died in their own homes; in these cases the hometown reflects the town of death. Six drug death victims died in hospital; however, in these cases the victims consumed the illicit drugs which killed them in their own homes. Two victims had no known fixed abode, but both died within the same cities in which they stayed. A further two victims died outside or in public spaces. A total of 11 (33%) victims died at addresses different to their usual place of residence. However, in each case the locus of death was within their hometown and no further than 3.8 miles from their home address.

These results demonstrate that in 2010 all DD victims died in close proximity to their homes. It is therefore probable that they did not have to travel far to obtain their drugs and elevated death rates in specific locations are not as a result of individuals travelling to those areas in order to obtain the drugs.

The calculation of the number of DDs per 1000 of the population corresponding to the location of the drug death enables identification of DD hotspots, by demonstrating which geographical areas display elevated DD rates when their populations are taken into account. The DD rate per 1000 of the population has been calculated according to geographical area. Table 2 displays the population of the three council areas of Tayside as at 30th June 2009..

Table 2: Population of the Council Areas within Tayside¹

Dundee	Angus	Perth & Kinross
143,390	110,250	145,910

Across the whole of Tayside, the number of drug deaths confirmed by the review group was 0.08 per 1000 in 2010, which is a reduction from the 2009 rate (which was 0.11 per 1000 population, n=42)). This is also below the 2005-2009 Scottish average rate of 0.09 DDs per 1000. However, when considering the separate council areas of Tayside, the rates differ substantially; most DDs occurred in Dundee (0.14 per 1000), followed by Angus (0.09 per 1000) and Perth and Kinross (0.02 per 1000). These patterns are summarised in graph 1 below.

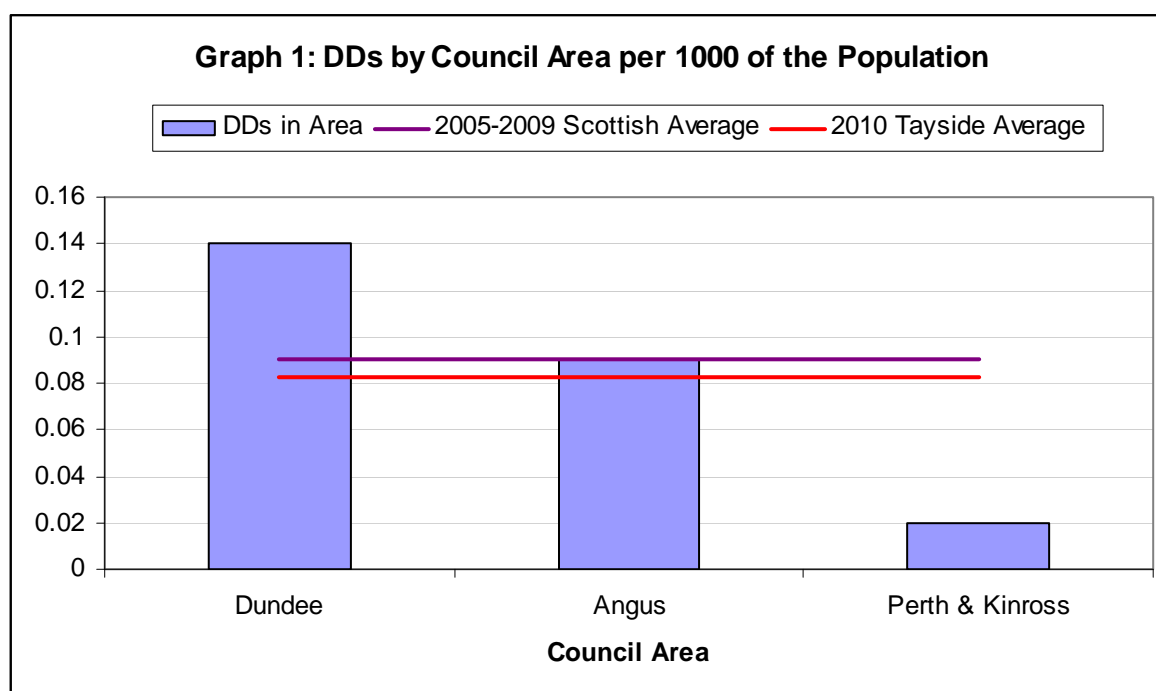
The estimated prevalence of problem drug use and of injecting drug use varies widely across the 3 Tayside Council areas², and this is broadly reflected in the patterns of distribution of drug deaths.

¹ This information was obtained from the General Register Office (GRO)

² Drug Misuse Statistics Scotland, ISD <http://www.drugmisuse.isdscotland.org/publications/09dmss/09dmss-004.htm>

Table 3: Estimated Prevalence of problem Drug use and Injecting Drug Use by Council Area within Tayside

Council Area	Problem Drug Use			Injecting Drug Use		
	Estimated number	Prevalence (%)	% Tayside total	Estimated number	Prevalence (%)	% Tayside total
Angus	868	1.24%	21%	217	0.31	17%
Dundee City	2454	2.6%	21%	845	0.89	68%
Perth & Kinross	873	0.97%	58%	193	0.21	15%



Key Points

- There has been a reduction in the number of DDs in Tayside, from 0.106 per 1000 in 2009 to 0.083 per 1000 in 2010.
- The average DD rate in Tayside in 2010 (0.083 per 1000) was slightly lower than the 2005-2009 Scottish average rate of 0.09 per 1000
- Most DDs in Tayside occurred in Dundee

3.1.3 Gender and Ethnicity

The majority (72.7%) of Tayside DD victims in 2010 were male. The male:female gender ratio in 2010 was 24:9. This is consistent with national patterns: across the whole of Scotland in 2009, 76% of DD victims were male (GROS, 2010).

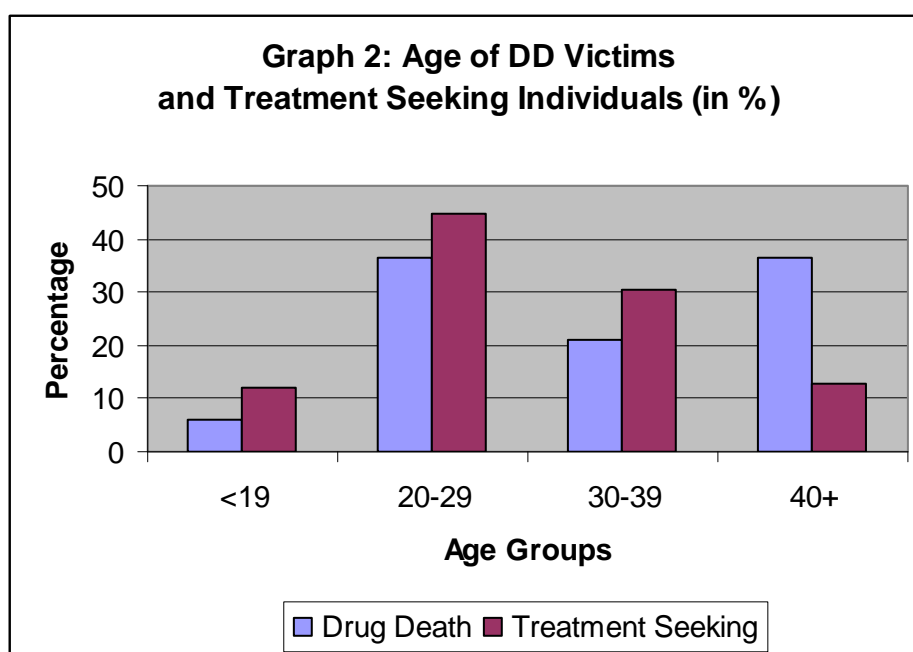
All 33 DD victims (i.e. 100%) were white British, the predominant ethnicity in Tayside.

3.1.4 Age

The age of DD victims in 2010 ranged between 15 and 56 years, with a mean age of 34.39 years, which is comparable to the Scottish average. Scottish figures in 2009 showed that DD victims typically died aged 35 years (GROS, 2010)³.

The DDs in Tayside in 2010 span a wide range of ages. When broken down into separate age categories spanning 10 years each, the results show a relatively even distribution of ages of the DDs victims. 36.4% of victims fell into the 20-29 year age group, and 21.2% fell into the 30-39 year age group. 30.3% of drug death victims were 40-49 years of age, and 6.1% were aged 50 or older. Only two victims (6.1%) were aged 19 years and under which challenges the commonly held public belief that DD victims are in their late teens.

While there appears to be a trend for the individuals to die due to a drug death at a slightly later stage in life, the majority of individuals seeking substance misuse treatment for the first time in Tayside⁴ fall within the 20-29 year age group with a median age of 28. These figures are summarised in graph 2 below.



This indicates that while individuals aged 20-29 were the most likely group to encounter problems related to drug misuse in general, a drug death is as likely to occur at that time as later on in life.

Key Points

- 100% of Tayside DD victims were White Caucasian
 - 72.7% of Tayside DD victims were male
 - The mean age of the Tayside DD victim in 2009 was 34 years
- DD victims were aged between 15 and 56 years, with a relatively even spread between those ages

³ National figures are calculated using median

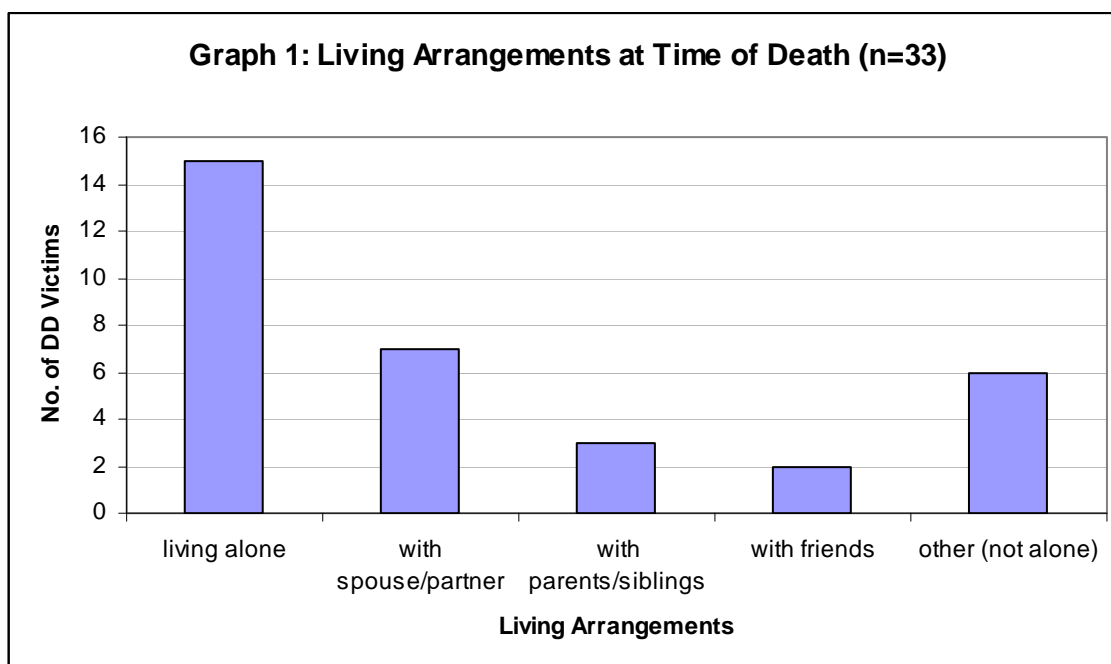
⁴ These figures were obtained from the ISD and are for the year ending March 2010

3.2 Life Context and Social Functioning

This section describes drug death victims' accommodation and living arrangements at the time of their death and in the six months prior to their deaths. This section also considers information relating to employment, both directly after school and at the time of death, as well as patterns surrounding the individuals' relationships with both friends and family.

3.2.1 Housing and Living Arrangements

Graph 1 below specifies the living arrangements of the DD victims at the time of their deaths.



Living arrangements at the time of death were known for all 33 individuals at the time of writing this report. While 45% of DD victims were living on their own at the time of their deaths, just over half of the victims (55%) were living with others; that is, their partners, parents, relatives or friends at the time of their death.

Four individuals were described by reporting services as homeless at the time of their deaths, with two of these living in homeless accommodation ("other"). A further two individual had no fixed abode at all, living what was often described in reports as a "nomadic lifestyle". The exact sleeping arrangements of these individuals prior to their deaths are difficult to ascertain, but it appears that these individuals were generally staying with various friends and family. A further two DD victims were staying in hospital at the time of their death.

When considering the housing status of the drug death victims, it is important to recognise that in a number of cases the living arrangements varied frequently, and the lifestyles of these individuals were sometimes described as "chaotic". As such, in addition to the four homeless individuals mentioned above, an additional six victims (30% altogether), experienced at least one change in living situation in the six months prior to their deaths. In four of these cases, this was because they had been incarcerated in the 6 months prior to

their death. In the remaining two cases the change in living arrangements were due to changes in their relationship status.

Whilst the living arrangements were known for the all DD victims of 2010, the exact accommodation type was not known for a large proportion, that is, whether the home was owned, rented privately or rented from the council. It is, however, known that 24 individuals (73%) were living in some form of residential accommodation. The lack of more specific information is due to the fact that this type of information is not routinely recorded by all agencies and therefore did not always exist in the DD victim's case notes/drug death questionnaires.

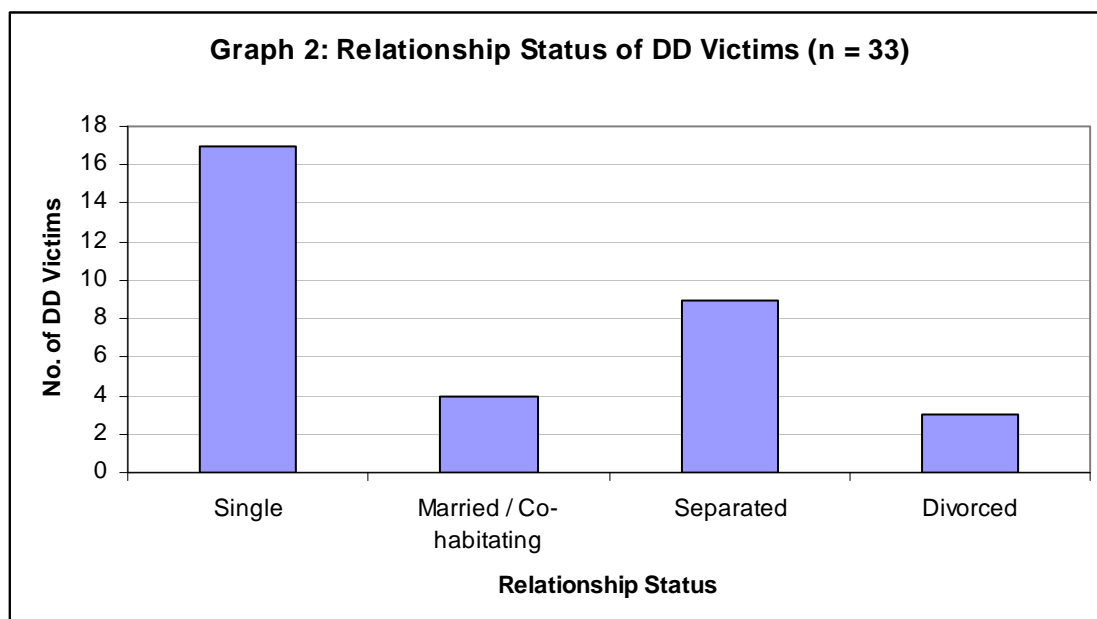
Overall, these results suggest that the majority of DD victims were living in stable environments. Furthermore, the fact that the majority of DD victims were living with others, suggests that they were supported by a network of friends and families. It also indicates that amongst the chaos of their drug use they were able to sustain relationships with others, which is considered in more detail in the next section.

Key Points

- The majority (55%) of DD victims were living with others at the time of their deaths
- The living arrangements of DD victims at the time of their deaths did not differ much from those of the six months prior to death, except in those cases where the person had been incarcerated during that time or had a change in relationship status

3.2.2 Relationship and Family Information

The relationship status was known for all 33 DD victims at the time of writing this report. It is considered here as it provides an indication of the level of social support available to the DD victims. Graph 2 below shows the relationship status of individuals at their time of death.



Whilst a large proportion (88%) of DD victims were not married/cohabitating at their time of death, a large number of individuals were or had been engaged in a relationship of some duration immediately prior to their death. Specifically, an additional seven victims who were classed as single, divorced or separated were actually in some form of relationship at the time of their deaths. However, in most of these cases the relationships were recent developments and were often described as “volatile” or “on/off relationships”.

Of the 11 individuals who did have partners at the time of their deaths, 63.6% had a partner who also had a substance or alcohol misuse problem. For these individuals, their drug misuse use was probably perpetuated by their environment. Since this information is not recorded routinely, this figure may, in reality, be higher.

3.2.3 Relationship with Children

Information pertaining to whether or not DD victims had any children was available for all 33 DD victims and was collected mainly from police reports.

15 DD victims (or 45%) had children, However, this does not imply that they were directly responsible for their welfare. In fact, only one of the DD victims' children were living with them at the time of their death.

Details of where the children of the remaining 14 DD victims were living at the time of death are incomplete. However, in four cases the children were adults themselves and had moved out into their own places of residence. For those who had young children, it appears that specific information pertaining to their whereabouts is not routinely collected. In the police reports, it is often merely noted that the children were “living elsewhere”. In most of these cases (n=7) the children were staying either with their other parent, or with a family member of the deceased.

3.2.4 Friendships and Relationships

Information about the nature of relationships DD victims held with friends was also considered. However, while information relating to close family relationships was generally available, information about meaningful friendships was sparse and more difficult to ascertain. Of the 33 DD victims of 2010, it was not known in two cases whether or not the victim had any relatives they felt close to, and whether or not eight of them had any friends to whom they felt close. However, this is a great improvement on the previous year, where this information was far less complete and a testimony to the contribution of the services.

For those individuals for whom this information was available, records indicated that the majority (83.8%) had at least one relative they felt close to, and 76% had at least one close friendship.

Of those individuals who had a family member to whom they felt close, the majority of individuals share this relationship with a parent (53.8%), their children (23.1%) or siblings (15.4%) and other family members (7.7%), such as grandparents, aunts/uncles and cousins. At least nine individuals had close relationships with more than one family member.

The fact that many DD victims had engaged in a relationship shows that they were not socially isolated as a result of their drug use and had managed to maintain meaningful relationships with others, including those outside the drug using community. This suggests

that there was perhaps some degree of social support available to the DD victims as they did have relatives and friends to whom they could turn to for support if it was needed. There is a support base that can be tapped into, to provide important information relating to overdose and drug misuse that could be cascaded to not only the drug using, but wider spectrum of the community.

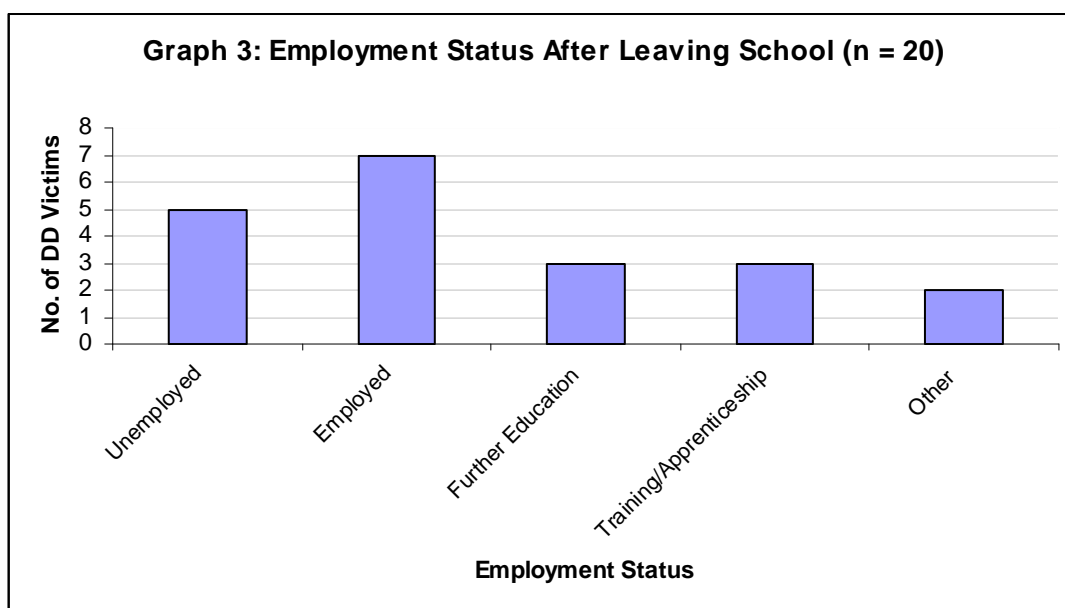
Although a large number of DD victims held a close, meaningful relationship with at least one other individual at their time of death, a substantial part of these (30.3%) were known to also have significant difficulties in their relationships. (This does not imply that the remaining individuals did not have any difficulties; it is merely the case that this information was not known for those individuals). In all of these cases, the difficulties were either in relation to the substance abuse and/or violence in the relationship.

Key Points

- While the majority (88%) of DD victims were classed as single, separated, divorced or widowed at the time of their deaths, a large number were involved in some form of intimate relationship at the time of their deaths
- Almost half (45%) of DD victims had children; however, 93.3% of these did not live with their children
- The majority of DD victims were not socially isolated; many were known to have a close relationship with a family member (83.8%) or a close friendship with another person (76%)
- At the same time, at least 30.3% were known to also have significant difficulties in these relationships

3.2.5 Education and Employment Status After Leaving School

The mean age at which DD victims left school was 15.35 years; however, this information was only known for 18 individuals. The employment status immediately after leaving school was known for 20 individuals. The majority of DD victims (75%) were engaged in some form of activity, including employment, further education, vocational training or apprenticeships. The remaining 25% were unemployed. The type of activities DD victims engaged in after school are displayed in Graph 3 below:



3.2.6 Employment Status at the Time of Death

At the time of their deaths, the vast majority of DD victims were unemployed. In fact, of all the DD victims of 2010, all but one were unemployed (93.7%). Only one of these individuals had a place on a training course at the time of their death.

There is a large discrepancy between the employment status of individuals post school education and immediately prior to death. This is perhaps not surprising given that DD victims had a prior history of drug abuse starting around the age of 16.3 years⁵. Although on average, individuals did not die as a result of their drug abuse until the age of 34 years, they were, on average, abusing drugs from around the time they left school, providing an indication of the chronicity of their substance misuse and subsequent impact of this on their quality of life.

Overall, the information on employment status shows that this is a population with a broad range of skills and occupations, of which many entered employment, pursued training apprenticeships and a minority went into further education after leaving school. Few were unemployed after leaving school. However this trend was reversed immediately prior to death with large number of DD victims being unemployed.

Sources of income were often difficult to determine. Many (69.6%) were known to be in receipt of some kind of state benefit, however, the type of benefit was not usually recorded.

Key Points

- The mean age at which DD victims left school was 15.35 years
- The majority of DD victims (75%) were engaged in some form employment/education activity after leaving school
- Only 25% were unemployed after leaving school. However this figure was reversed directly before death, at which point 93.7% of DD victims were unemployed.

⁵ See Section 5.

3.3 Criminal Justice and Offending

The present section examines the DD victims' criminal and offending history in more detail. History of incarcerations is also considered.

3.3.1 History of Offending

The criminal justice and offending histories were available for all 33 DD victims. Twenty seven of these 33 individuals (or 81.8%) had been convicted of a crime at some point in their lives. In 8 of these cases (29.6%), the individual had been arrested, at least once, in the six months prior to their death. Four of these arrests were due to or related to substance misuse offences, and two were due to alcohol-related offences. In other cases, for instance theft or shoplifting, it is likely that these offences were committed in order to fund a drug habit. In 2009, 50% (15 of 30) of those who had ever been arrested had been arrested at least once in the 6 months prior to their death.

Eighteen percent (or 6 out of 33) of drug death victims had outstanding charges or court cases at the time of their deaths. These charges included misuse of drugs, various forms of assault, theft, breach of peace and attempted murder.

3.3.2 History of Incarcerations

Twenty two (or 66.6%) of DD victims were known to have served a prison sentence some point during their lives. However, only six of these individuals (27.2%) had been in prison in the 12 months before their death.

Table 1: Number of DDs occurring following prison release

Time since most recent prison release	No. of DD victims (n = 22)
Less than 2 weeks	0
2 weeks to 1 month	1
1 to 6 months	3
6 months to a year	2
More than a year	16

As shown in Table 1, of those who had served a prison sentence in the past, nobody died within 2 weeks of being released from prison and only one individual died between 2 weeks and 1 month after their most recent prison release. This finding indicates that the drug deaths in Tayside in 2010 were unlikely to be due to reduced tolerance levels due to a recent incarceration and subsequent overdose. In 2009, of the 18 cases who had ever been in prison, 3 died within 2 weeks of release, and one between 2 weeks and 1 month of release.

3.3.3 History of Court Enforced Restrictions and Interventions

The question of whether DD victims had been subject to any legal interventions prior to their deaths was also considered and was available for all 33 victims. Consistent with the relatively low arrest rate in the 6 months prior to death, court-enforced restrictions/interventions were very rare. In fact, only two individuals (or 7% of those who had a criminal history) were subject to community restrictions, one of which was probation and the other, a Restriction of Liberty Order.

Key Points

- 81.8% of DD victims had been convicted of a crime at some point in their lives
- 29.6% of DD victims who had been arrested, were arrested at least once 6 months prior to their death, compared with 50% of the 2009 cohort of drug deaths who had ever been arrested
- 66.6% of DD victims had served a prison sentence some point during their lives
- 27.2% of DD victims who had served a prison sentence had done so in the 12 months before their death
- None of the victims died within 2 weeks of release from prison, compared with 17% of those in the 2009 cohort who had ever been imprisoned
- Few DD victims were subject to court enforced interventions

3.4 Physical/Psychological Health and Significant Life Events

This section explores the types of physical and psychological/psychiatric suffered by the DD population in Tayside, with a particular emphasis on co-morbidities and life events.

Data pertaining to the physical and psychological health of the DD victims in Tayside was available for all 33 individuals at the time of writing this report. However, it is not possible to say how complete this data might be; therefore the current section can only summarise what is known about these individuals. It is likely that the results reported in the present section are underestimating the real situation.

3.4.1 Psychiatric/Psychological Problems

Twenty-three of the 33 DD victims (or 69.7%) were known to have psychiatric or psychological difficulties.

By far the most common problems experienced were mood disorders; 17 individuals (51.5%) suffered from depression; most were prescribed medication.

At least nine individuals suffered from anxiety-related problems, including phobias, general anxiety, PTSD and OCD and were prescribed medication to manage their anxiety at the time of death.

Two individuals suffered from personality disorders, and at least three displayed psychotic behaviours (having been diagnosed with psychotic personality disorder and paranoid delusions). Three further individuals had suffered severe, but isolated psychotic episodes in the past, which were probably related to their substance abuse.

At least four of the above cases suffered from complex and multiple psychiatric difficulties.

Furthermore, 9 DD victims (or 27.3%) had either expressed suicidal ideation, or attempted suicide at least once in their lives and five (15.2%) were known to have self-harmed.

In two cases (or 6.1%) the victims experienced new psychological or psychiatric difficulties or experienced a deterioration in existing symptoms, in the 6 months prior to their deaths.

3.4.2 Physical Health Problems

Seventeen of the 33 DD victims (or 51.5%) were known to have suffered from significant physical difficulties.

Common problems included blood-borne viruses (n = 6), severe pulmonary and/or cardiovascular problems (n = 6) and orthopaedic injuries causing mobility issues and chronic pain (n = 6). In at least four DD victims, there was an identifiable connection between chronic pain and substance dependence.

In ten cases (or 30.3%) did the victim experience a new severe physical problem or deterioration in existing physical symptoms in the 6 months prior to their deaths.

3.4.3 Significant Life Events

Information pertaining to the childhoods of the DD victims was not available for all individuals. This information was generally not available for the DD victims in the older age groups. However, 12 (or 36.4%) individuals were known to have experienced significant difficulties in childhood. These individuals reported disrupted childhoods, physical abuse, sexual abuse and/or had spent time in foster care. Twenty-five DD victims (75.8%) were known to have experienced significant adverse life events, with most individuals having suffered multiple life events. The number and type of life events recorded in case notes/DD questionnaires are summarised in the table below:

Table 1: Number and Type of Life Events Recorded in Case Notes/DD Questionnaires

Life Event	No. of individuals	% of individuals
Bereavement	14	42.4%
Serious recent relationship problems	20	61.9%
Sexual Abuse	4	12.1%
Physical Abuse/Assault	11	33.3%
Homelessness	4	12.1%
Child Custody Issues	9	27.3%

The most common life event impacting the lives of DD victims were serious problems with their relationships, which 61.9% of this population had experienced. Bereavements were also common; 42.4% had lost a loved one in the past. The loss was often recorded as that of a parent, spouse, child, or close friend. Serious injury or assault was also commonly suffered by the DD victims (n = 11, or 33.3%).

At a basic level, the above information provides an indication of the level of instability of these individuals in their lives. The personal histories show that these DD victims experienced sexual, physical and/or emotional abuse and significant losses, which may have in turn been precipitating, maintaining and/or consequential factors of their substance misuse.

Sadly, in some cases the DD victim's siblings, partners or friends were not only substance users but also DD victims themselves. The life events of DD victims convey a sense of vulnerability, which may have led to the formation of coping by means of substance misuse and therefore impacted negatively upon their abilities to manage adversity in their adult lives.

Key Points

- The majority of DD victims (69.7%) suffered from psychological or psychiatric difficulties, the most common of which was depression
- 51.5% of the DD victims were known to have suffered significant physical difficulties
- 75.8% of DD victims were known to have experienced a significant adverse event in their adult lives and 36.4% had experienced adversity in childhood
- Most common adverse life events included separations, bereavements, and assault/physical abuse

3.4.4 Co-morbidity

Up until this point, the psychiatric problems, physical problems and life events of these individuals have been examined in isolation. In reality, however, individuals often suffer from a combination of these factors. The concept of co-morbidity can differ widely in terms of context and interpretation. For example, an ongoing issue is whether or not co-morbidity should be viewed over the course of a lifetime, or within a predefined context (Todd et al, 2004). For the purposes of this report, analysis of DD victim's co-morbidity is considered in the context of multiple physical, psychological/psychiatric, and substance misuse morbidities over the course of their lives, as opposed to a specific point in their lives.

The table below summarises the combinations of physical and psychiatric/psychological difficulties⁶, as well as life events experienced by the DD victims in connection with their substance abuse.

Table 2: Combinations of Co-morbidity with Substance Misuse Experienced by DD victims (n=37)

Combinations	No. of Individuals	% of Individuals
Physical difficulties alone	1	3.0%
Psychological difficulties alone	3	9.1%
Life Event alone	4	12.1 %
Physical + Psychological	3	9.1%
Physical + Life Events	4	12.1%
Psychological + Life Events	8	24.2%
Physical + Psychological + Life Events	9	27.3%

Only one individual was not known to have suffered any difficulties. As demonstrated by the table above, the combined effects of physical and psychological difficulties, together with life events, are far more prevalent in this population than these difficulties on their own. The majority of DD victims (72.7%) had experienced a combination of significant physical and psychological difficulties and life events alongside their substance misuse problems.

Key Points

- The majority of DD victims (72.7%) had experienced a combination of psychological and physical difficulties as well as life events, rather than a single problem alongside their substance misuse problems

⁶ For the purpose of this table, past self-harm or suicide attempts are included as psychological difficulties

3.5 Substance Misuse Histories

The present section further examines the substance misuse histories of the DD victims; including the age at which they started misusing illegal substances, lifetime injecting characteristics and overdose histories.

Details of the substance misuse histories were available for all 33 individuals who died of a drugs death in 2010.

In the 6 months prior to death, all but one of these DD victims (96.9%) were known to have misused prescribed and non-prescribed drugs. All these individuals (n = 32) were known to abuse illicit substances and alcohol in combinations of 2 or more, which in all but two cases included at least one of the following: Heroin, Benzodiazepines and/or Methadone (prescribed and non-prescribed). This suggests that almost all DD victims were poly-drug users.

While the focus of this report is on drug deaths occurring as a result of illicit substances, it is nevertheless worth noting that a large proportion of the DD victims (54.5%, or 18 individuals) were also known to have severe problems with their alcohol consumption.

3.5.1 Age at which Drug Misuse Began

The age at which the DD victims started misusing drugs was known for 20 individuals (60.6%), and ranged from 12 to 28 years, with an average of 16.3 years. This is also roughly the age at which most of the DD victims left school. A common trend was for the individuals to start abusing cannabis (and alcohol) at that age, followed by a combination of Ecstasy, LSD, Amphetamines and Cocaine some months after that.

The average age at which victims started abusing heroin was 19.5 years, however, this figure is only based on the 13 individuals for which this information was known.

A very similar age of onset of substance misuse, and pattern and pace of progression, was reported in the 2009 drug deaths report.

The average age of a DD victim in Tayside in 2010 was 34 years – suggesting that the DD victims of Tayside had an average drug career of approximately 17 years prior to their deaths.

3.5.2 Lifetime Injecting Characteristics

The injecting behaviour of DD victims was considered in order to gain a more detailed profile of the drug use histories and characteristics of this population.

Twenty four (or 72.7%) of the DD victims were known to have injected at some point in their lives. The age at which these individuals first injected was known for 10 of these individuals and ranged from 14 to 29 years, with an average age of 21.4 years. Considered together with the age at which these individuals first stated using heroin (19.5 years), these figures confirm a known trend whereby individuals tend to first smoke heroin for some time before progressing to injecting use of the drug.

3.5.3 Drug Use Characteristics of Injecting vs. Non-Injecting Users

The substances most commonly detected in the post-mortem toxicology findings of injecting and non injecting DD victims were examined further, and these are summarised in the table below. Please note that toxicology results were available for 28 individuals at the time of writing this report (no toxicology was available for the two deaths due to anthrax, and 3 toxicology reports are outstanding).

Table 1: Substances Detected in Toxicology of Injecting and Non-Injecting DD Victims

Substance	Non-Injectors (n = 7)	Injectors (n = 21)
Heroin/morphine	42.8%	76.2%
Benzodiazepines	71.5%	85.7%
Methadone	71.4%	42.9%
Alcohol	28.6%	14.3%

As can be seen from the table, Benzodiazepines were overall the most commonly abused drugs by all users, regardless of injecting status. However, these figures suggest that the injectors were more likely than the non-injectors to abuse morphine. Also, it appears that the non-injectors were more likely than the injectors to die as a result of an overdose which involved methadone.

3.5.4 Overdose Histories

Nineteen of the 33 individuals (or 57.5%) were known to have experienced at least one drug overdose at some point in their lives. For the remaining 14 individuals no overdose had been recorded, which does not imply that they have never actually experienced an overdose.

For those individuals that were known to have overdosed in the past, the number of recorded overdoses ranged between 1 and 15, which included both accidental and deliberate overdoses. Ten of those who were known to have overdosed in the past had done so on multiple occasions.

Furthermore, 12 DD victims (or 36.3%) were known to have overdosed in the 12 months prior to their deaths.

Key Points

- The vast majority of the DD victims were known poly-drug users, 72.7% of which were IV users
- The average age at which drug misuse began was 16.3 years, and age at which individuals first injected was 21.4 years-this is very similar to the pattern seen in 2009
- By the time of their deaths, the victims had an average drug using career of almost 17 years
- While injecting drug-users were relatively more likely than non-injecting users to die of an overdose that involved morphine, the non-injectors were relatively more likely to die of an overdose involving methadone
- 57.5% were known to have overdosed at some point in their lives, often on multiple occasions
- 36.3% victims were known to have overdosed in the 12 months prior to their deaths

3.6 Service Use Histories

The present section outlines the service use histories and frequency of contact with services of the DD victims 6 months and 5 years prior to death. It also summarises any pharmacological interventions in the 6 months prior to death.

It is recognised that being engaged in a process of care and treatment has a positive impact on outcomes, including reducing the number of drug-deaths. In order to co-ordinate and integrate the care that is provided to individuals, it is important to determine the extent of contacts made with services and the agencies most involved in providing a service to DD victims.

3.6.1 Services Accessed within 5 Years Prior to Death

Information pertaining to service use histories was available for all 33 individuals. Records showed that all of these individuals had contact with at least one service in the 5 years prior to their deaths, 32 of which were known to two or more services. The particular services involved are listed in the table below:

Table 1: Contact with Services of 2010 DD victims in the 5 years prior to death (n=33)

Service	No. of individuals who had contacts	% of individuals who had contact
General Practitioner (GP)	33	100%
Tayside Substance Misuse Services (TSMS)	19	57.6%
Scottish Prison Service (SPS/EACS)	16	48.5%
Social Work Services	10	30.3%
Criminal Justice Services	8	24.2%
Mental Health Services	8	24.2%
Hospital/A&E*	6	18.2%
Custody Nurse	5	15.1%
Addaction	5	15.1%
Housing/Homeless Units	4	12.1%
Needle Exchange	3	9.1%

* This figure is likely to underestimate the real extent of the A&E contacts of the DD victims, as this information was only included in the above table if it was contained in the GP notes.

Table 1 illustrates the types of agencies that DD victims were involved with 5 years before their death. *This table does not include multiple contacts made by an individual to any single agency.* The majority of DD victims (32 or 96.9%) had accessed more than one service in the 5 years prior to their death. The individual who had only accessed a single service had only been in contact with their General Practitioner.

General Practitioners were the most accessed services; in fact, all DD victims had been in contact with their GPs in the 5 years prior to death. The other most commonly accessed services were NHS Tayside Substance Misuse Services (57.6%), Scottish Prison Service (48.5%) as well as Social Work and Criminal Justice Services. It should be noted that needle exchange services are often accessed anonymously. Therefore, the numbers presented here are only those instances where the person was known to the staff by (their real) name.

3.6.2 Services Accessed During the 6 months Prior to Death

Twenty-eight individuals (84.8%) were known to have had contact with a service during the 6 months prior to their death, 20 of which had at least one contact with a service in the month prior to their deaths.

The table below shows the number of agencies accessed by individuals (n = 28) in the 6 months prior to their deaths. This table does not describe the multiple contacts with services within the same month, but does include different agencies accessed by the same individual.

Table 2: Contact with Services of 2010 DD victims in the 6 months prior to death

Service	No. of individuals who had contact	% of individuals who had contact
General Practitioner (GP)	27	81.8%
Tayside Substance Misuse Services (TSMS)	12	36.4%
Mental Health Services	7	21.2%
Hospital/A&E*	6	18.2%
Scottish Prison Service (SPS/EACS)	4	12.1%
Social Work Services	4	12.1%
Criminal Justice Services	3	9.1%
Housing/Homeless Units	3	9.1%
Addaction	2	6.1%
Custody Nurse	2	6.1%
Needle Exchange	1	3.0%

* This figure is likely to underestimate the real extent of the A&E contacts of the DD victims, as this information was only included in the above table if it was contained in the GP notes.

Table 2 displays the number of contacts that DD victims made with a statutory and/or non-statutory agency 6 months prior to death. Twenty three individuals had contact with multiple services in the 6 months prior to their deaths.

Most contact had been made with the General Practitioner (81.8%), followed by NHS Tayside Substance Misuse Services (36.4%), Mental Health Services (21.2%) and Hospital Accident and Emergency Rooms (18.2%).

Key Points

- All drug death victims were known to at least one service in the 5 years prior to their deaths.
- 84.8% of all DD victims had accessed at least one service in the 6 months prior to their deaths.
- General Practitioners and NHS Tayside Substance Misuse Services were the most commonly accessed services.

3.6.3 Pharmacological Intervention 6 Months Prior to Death

Of particular interest is the proportion of DD victims who received pharmacological treatment for their drug dependency problem in the 6 months prior to their death. This information was available for all 33 individuals.

Ten individuals (30.3%) had received some form of treatment for a drug misuse problem in the six months prior to their deaths. This means that the majority of victims (69.7%) did not receive or seek pharmacological treatment in the 6 months prior to death.

Of the 10 individuals who were in receipt of a pharmacological intervention 6 months before their death, nine were prescribed Methadone (27.3% of total) and one received Buprenorphine. A further 5 individuals were known to have been recipients of methadone prescriptions at some point in the past (but more than 6 months prior to their deaths).

The proportion of individuals receiving pharmacological treatment and receiving methadone specifically (24.3%) were very similar in 2009.

All of the 9 individuals who received methadone were still receiving their methadone at the time of death. None of these were recent arrangements in that all 9 individuals had been receiving their prescribed methadone for at least one year prior to their deaths.

Methadone dispensing arrangements were known for all nine individuals concerned. All nine individuals collected their dosage from the pharmacy for supervised consumption on the premise. Eight individuals collected their prescription on 6 days per week, while one individual collected their methadone every day of the week (including Sunday). The daily dosages ranged from 45mg-100mg. The duration each individual remained on their final dosage ranged from 1 week to 21 months.

Key Points

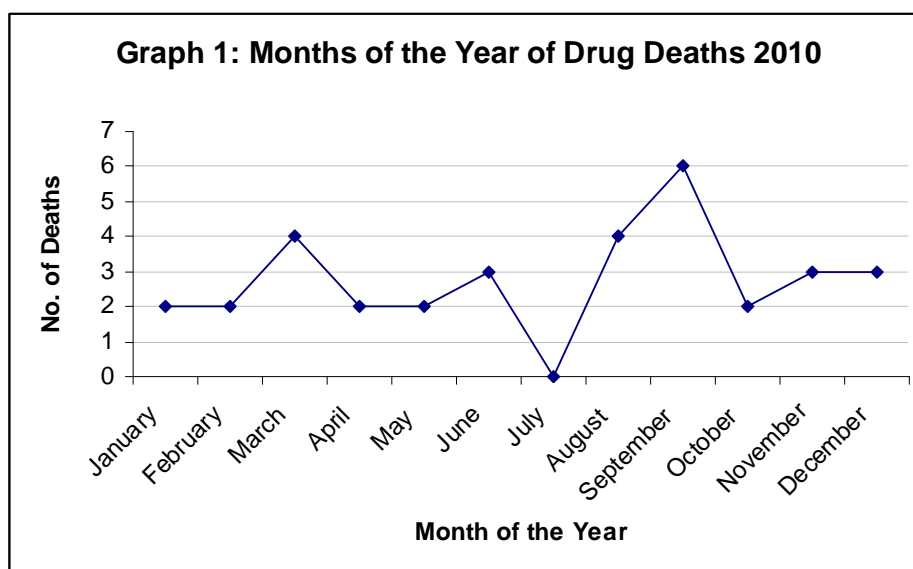
- A large proportion (69.7%) of DD victims did not seek/receive treatment for their drug problem 6 months before they died
- 30.3% were receiving pharmacological treatment in the 6 months prior to their death; most were prescribed methadone
- All of these individuals (30.3%) were still on a methadone programme at the time of their deaths

3.7 Circumstances of Death

The present section summarises the circumstances of the drug deaths in Tayside in 2010, including the months of the year and days of the week that the drug deaths occurred. This section also describes specific information concerning the scene of the death, such as the presence of others and attempted interventions.

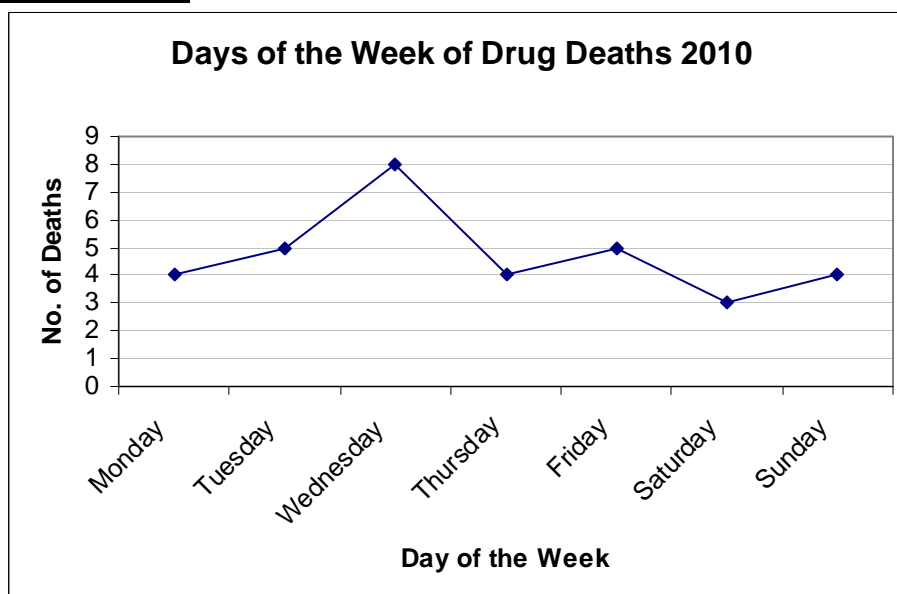
3.7.1 Timings of Deaths

3.7.1.1 Month of the year



As can be observed from Graph 1 above, the prevalence of drug deaths in Tayside remained reasonable stable over the course of 2010. There were no drug deaths in July, followed by a rise in the number of drug deaths in September. Overall, the results do not indicate any specific patterns.

3.7.1.2 Days of the Week



As can be seen from the graph above, drug death victims in Tayside were most likely to die mid-week, with 36.4% dying on a Friday, Saturday or Sunday.

Overall, there was no noticeable trend of drug deaths which occurred over the weekend, in contrast to 2009 when there was a distinct trend towards higher numbers of weekend deaths.

Seven of the 33 deaths involved alcohol (21.2%). Over the course of a week, 28.6% of drug deaths which occurred on a weekend involved alcohol, compared to 71.4% of deaths which occurred during the week and involved alcohol.

Key Points

- Drug deaths in 2010 in Tayside occurred at a relatively even rate over the course of the year
- Overall, drug deaths were relatively more likely to occur during a week than over a weekend
- Drug Deaths which occurred over the weekend were no more likely to involve alcohol than those occurring during the week

3.7.2 Circumstances of Death

The circumstances surrounding the individual drug deaths were also considered, including whether or not others were present at the time of death, if bystanders recognised common signs of overdose and what, if any, intervention was employed.

The majority of DD victims (n = 19 or 57.6%) were in the company or in close proximity to others at their point of death. That means that others were at least present in the same premises as the DD victim during the episode of their death. In all cases, the individuals present were known to the victim. The relationships of those persons present were: partners (n = 5), close family members (n = 2), friends of the victim (n = 9), and other (n = 3).

3.7.3 Snoring Immediately Prior to Death

It has been noted that individuals often are observed to be snoring prior to a visible adverse reaction to the drugs they have consumed. This was identified in a small number of cases (n = 3), which nevertheless form 15.8% of DD victims who died in the presence of others. In many cases the victim was simply thought to be asleep at the time of their death and this may have inhibited further intervention. Individuals present were known to have checked on the DD victims, sometimes on several occasions.

Whilst most cases did not report information on snoring, it may well be that it did not appear significant to those who were present (and of course would not have been identified in those cases where individuals died alone). In such cases, the presence or absence of snoring would not have been reported to the police, and would not have been documented in the Sudden Death Report. However, awareness of such warning signs of an overdose may assist individuals in identifying overdose and intervening to prevent them becoming a drug fatality.

3.7.4 Interventions Attempted at the Scene

Of cases where a witness was present ($n = 19$), some form of cardio-pulmonary resuscitation (CPR) was attempted by bystanders in prior to ambulance arrival in the majority of cases (57.9%). Details pertaining to the exact nature of the CPR procedures carried out, was not always fully recorded, however, in most cases the CPR had to be instructed by the ambulance crew to those present over the telephone.

Often the nature of CPR conducted was partial, e.g. checking the airways, putting the DD victim in the recovery position. Other interventions were also attempted in bid to revive the DD victim. These included; shaking the DD victim, calling the out to the DD victim and slapping the victim.

Narcan® (Naloxone injection) was administered to 24.2% of the victims. However, from the reports it is difficult to quantify this information – for instance, it is not always clear whether or not Narcan was available, and in some cases, whether the use would have been appropriate (or if the victim was irrevocably dead at the time of ambulance arrival).

Key Points

- The majority of DDs (57.6%) occurred in the presence of others, which were in all cases known to the victim
- In many cases where others were present, the victim was simply believed to be sleeping at the time of their death, thus delaying any possible interventions
- CPR was attempted by bystanders in the majority of cases (57.9%); however, this was often partial and had to be instructed by the ambulance crew over the telephone

3.8 Toxicology Results of Drug Deaths in Tayside 2009

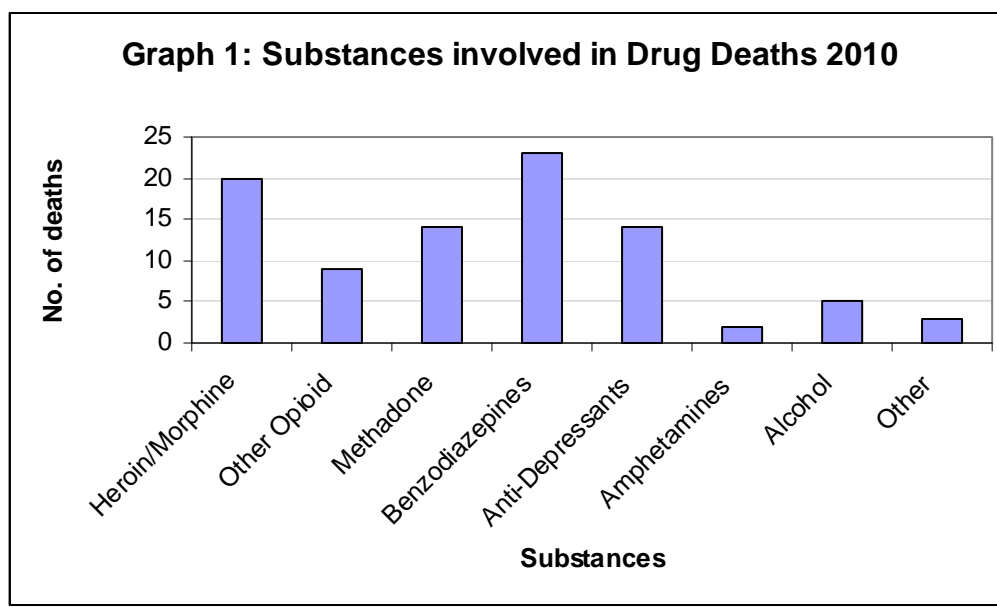
This section describes the post-mortem toxicology findings of the Drug Death victims in context of the poly-substance misuse culture in Tayside in 2010.

Post mortem toxicology reports of the DD victims were analysed to gain a greater insight into the types of substances that led to the fatal overdoses. At the time of writing this report, toxicology results were available for 28 DD victims. Three toxicology reports were outstanding, and no toxicology was available for the two individuals who died due to an anthrax infection.

Forensic toxicologists conduct blood/urine tests for the substances believed to be implicated in the drug death. A typical blood test usually tests for basic drugs, including acid/neutral drugs, benzodiazepines, non-steroidal anti-inflammatory drugs (NSAIDs) and Morphine. Urine samples are analysed for opiates, amphetamines, cannabinoids, cocaine, benzodiazepines, methadone, barbiturates, tricyclic antidepressants (TCA), MDMA and methamphetamine. Therefore, only those substances tested for are likely to be detected in the toxicology, potentially biasing the outcome of toxicology findings.

3.8.1. Toxicology results

Graph 1 below shows all substances which were found in the toxicology results of the DD victims in Tayside in 2010. The graph also shows the number of victims who were found with each substance in their toxicology results. Please note that metabolites are not considered in the following analysis (e.g. diazepam and nordiazepam are represented simply as one benzodiazepine).



As this graph shows, benzodiazepines were the most common substances involved in DDs in Tayside in 2010. It was involved in all but 5 cases for which this information was available, therefore being involved in playing a role in 82.2% of deaths. Furthermore, many deaths involved more than one benzodiazepine; in total, 39 benzodiazepines were found in the 28 toxicology reports.

Heroin/morphine was the second most common substance involved in DDs in Tayside in 2010, having been detected by toxicology in 20 (or 71.4%) of victims.

Methadone was involved in 50% of DDs in Tayside in 2010, an increase from the 2009 figures when methadone was detected in 25% of toxicological analyses. Seven (or 50%) of the individuals who died with methadone in their system had actually been prescribed the medication at the time of their deaths. These findings suggest that the remaining 7 victims had obtained their methadone illicitly. In 2009, more than three-quarters of those in whom methadone was detected toxicologically had been on a methadone prescription.

Antidepressants such as Fluoxetine and Citalopram were detected in 14 (50%) of the DDs (compared with 17% in 2009), and other opioids such as Dihydrocodeine and Tramadol were detected in 9 (32.1%) of the victims. A number of substances were involved in only one or two drug deaths. These are included in the “other” category in the above graph and were Lignocaine, Gabapentin and Mephedrone

Overall, heroin/morphine, benzodiazepines, anti-depressants and methadone were the four most common substances involved in the Tayside DDs of 2010. Compared to the 2009 figures, alcohol was far less common in Tayside DDs of 2010 (detected in 42% of cases in 2009, and in 14% in 2010).

Key Points

- Benzodiazepines, Heroin/Morphine, Methadone and Anti-depressants were the four most common substances involved in the DDs of 2010
- 82.2% of victims had taken benzodiazepines shortly before their death
- Methadone was involved in 50% of all DDs in Tayside in 2010; half of these individuals had not been prescribed the medication

3.8.2 Substances Implicated Concomitantly

As demonstrated by the figures in the previous section, virtually all DD victims died as a result of the consumption of a combination of drugs. On average, 3.89 substances were discovered in the toxicology of a Tayside DD victim. No victim died as the result of consumption of a single substance, four died with two substances detected in their toxicology, eight with a combination of three substances, five with a combination of four substances and eleven individuals with a combination of five or more substances in their toxicology⁷.

As would be suspected from the above figures, by virtue of being most common, benzodiazepines, heroin/morphine and methadone were the most common substances implicated in combinations. The number of times each combination of the three most common substances occurred is as follows:

Benzodiazepines and Morphine (n = 16)

Benzodiazepines and Methadone (n = 12)

Morphine and Methadone (n = 7)

⁷ For the purpose of these statistics, a substance and its metabolite (e.g. Diazepam and Nordiazepam) were counted as a single substance

Benzodiazepines, Morphine and Methadone (n = 5)

Of the 28 post mortem and toxicology reports, four (14.2%) provided a general cause of death, such as “Chronic Adverse Effects of Drug Abuse”. The remaining 24 reports mentioned specific substances in the cause of death. However, of these, only one mentioned all substances found. Heroin/morphine was mentioned in the cause of death in 18 cases (90% of those where it was present), Methadone was mentioned as the cause of death in seven cases (50% of those where it was present), benzodiazepines were mentioned as a cause of death in six cases (26.1% of those where it was present), and antidepressants were mentioned as the cause of death in 4 cases (28.6% of those where it was present).

3.8.3 Therapeutic, Fatal and Actual Levels of Substances

Toxicology reports generally include a reference for the “therapeutic” and “fatal” ranges of a substance, based on the existing literature. However, these are often based on relatively small sample sizes, and do not take into account the possibility of poly-drug use. The latter is particularly important, as virtually all of the DDs in Tayside occurred as a result of multiple substances.

Table 1 below shows the published therapeutic and fatal ranges for the most common substances found to be involved in the DDs in Tayside in 2010. For comparison, it also shows the actual ranges observed in the victims in Tayside.

Table 1: Therapeutic, Fatal and Actual Ranges of substances involved in DDs (mg/l)

	Morphine	Diazepam	Nordiazepam	Methadone
“Therapeutic” Range*	0.02 – 2.3	0.7 – 1.15	0.35 – 0.52	0.57 – 1.06
“Fatal” Range*	0.14 <	0.89 <	1.48 <	0.52 <
Actual Range (in Tayside)	0.06 – 0.97	0.44 – 1.72	0.28 – 1.94	0.25 – 2.99

*Toxicological analysis of all 382 drug deaths for 2002 in Scotland (Zador et al 2005)

The actual amounts of the drugs observed in DD victims in Tayside are often lower than the published fatal and even therapeutic ranges of any given drug. This highlights the importance of the cocktail effect, and the above values continue to raise questions about the clinical utility of the designated ‘fatal’ and ‘therapeutic’ levels. Most fatalities involved a type of benzodiazepine taken together with other drugs or alcohol and this is now acknowledged in toxicology reports more frequently, as a “cocktail”

Key Points

- All of the DDs occurring in Tayside involved a lethal combination of two or more substances
- The “therapeutic” and “fatal” ranges of a substance (as used in the toxicology reports) are diffused in their meaning in light of these poly-substance deaths

3.9 Pharmacology of Heroin in Tayside

This section describes the affordability, widespread availability and purity levels of Heroin in Tayside in 2010.

In 2010, Tayside Police seized a total of 11.6 kilos of class A drugs of which 5.5 kilos were heroin. During 2010, this equates to £550,000 for the heroin recovery alone.

3.9.1 Purity Levels – Heroin

The purity levels of heroin seized in Tayside fluctuated throughout the year and ranged from 7% to 39%. This compares with the Scottish purity levels of between 0.9% and 88% for all samples tested, although in 80% of these samples the purity ranged from 15% to 41%.

Average heroin purity in Tayside showed a downward trend in the latter half of the year and initial reports are that this is continuing into 2011.

It has to be noted that the Tayside purity levels are taken from a very small sample of cases so once again the data are very limited. Not every recovery of heroin is tested - this is only undertaken on a case by case basis as circumstances dictate.

3.9.2 Cutting Agents

Analysis of heroin recoveries has revealed that caffeine and paracetamol are still the most common inert substances used to dilute heroin. There will be other substances used to cut the heroin but forensic tests are not available to detect all potential cutting agents, so it is impossible to account for every individual one.

Data on cutting agents are becoming progressively more reliable and sophisticated, and more readily available to the police. Based on trends in the purity levels, it may be assumed that heroin is being cut to a much greater extent with the aforementioned substances.

Key Points

- There is wide variation in the purity of seized heroin in Tayside, in common with the rest of Scotland
- There was a downward trend in the purity of heroin recovered in Tayside during the second half of 2010 and early 2011
- Caffeine and paracetamol are the most commonly detected cutting agents

Section 4: Key findings from the national drug deaths report and comparisons with local data 2009

4.1 Comparison of Drug Deaths in Tayside (DDT), 2009 with Drug Deaths in National Drug Related Deaths Database (NDRDD), 2009

4.1.1 Definitions

The National Drug Related Deaths Database (NDRDD) commenced data collection from January 2009, using a questionnaire very similar to that developed in Fife and in use in Tayside. Deaths recorded on the NDRDD include those caused directly by the use of controlled drugs, and drug *related* deaths, as recorded by the General Registrar Office for Scotland (GROS). These drug related deaths are not included in the Tayside drug deaths database (TDDD) as ascertainment is less complete and less timely.

Neither the NDRDD nor the Tayside DDD included information on intentional self-poisoning with controlled drugs (suicides, ICD-10, X60-64), although these are recorded as drug related deaths by GROS. Because of these differences in the inclusion criteria, the number of individuals recorded on each of these databases will differ slightly.

Data for the NDRDD is supplied by Alcohol and Drugs Partnerships (ADPs) across Scotland.

4.1.2 Incidence of drug deaths

GROS recorded 545 deaths in 2009, while NDRDD recorded 432 deaths that matched the criteria for inclusion and for which information was provided by local ADPs. DDT recorded 42 deaths of which 37 had complete data. The report of the NDRDD acknowledges that there were 92 drug related death in 2009 that complied with the definition for inclusion on the database, but for which no questionnaire was returned.

4.1.2 Geographical area of residence

The area of residence of drug deaths victims recorded on the NDRDD is shown in the tables for Tayside and the areas with the highest rates of death.

The NDRDD suggests that Dundee City is the local authority area with the highest crude death rate of all local authorities in Scotland and Tayside NHS Board has the second highest crude mortality rate of the NHS Board areas. It is, however, difficult to accurately compare these rates without further information on the 92 missing cases.

Table 1: Drug deaths by local authority area of residence (using NDRDD 2009 data and 2009 GROS population data)

	Number of deaths	Population	Death Rate per 1,000 pop'n
Scotland	432	5,194,000	0.08
Aberdeen City	30	213,810	0.14
Angus	10	110,250	0.09
Dundee City	28	143,390	0.20
Edinburgh, City of	39	477,660	0.08
Glasgow City	105	588,470	0.18
Perth and Kinross	3	145,910	0.02

Table 2: Drug deaths by health board area of residence (using NDRDD 2009 data and 2009 GROS population data)

	Number of deaths	Population	Death Rate per 1,000 pop'n
Grampian	41	544,980	0.08
Greater Glasgow & Clyde	161	1,199,026	0.13
Lothian	65	826,231	0.08
Tayside	41	399,550	0.10

4.1.3 Gender, Age and Ethnicity

On both databases, around three quarters of those who died were male and both nationally and locally almost all were white (either British or Scottish and White other).

The age distribution of drug deaths is broadly similar across the national and local databases, although differences in the age bands used in the two databases makes direct comparisons difficult. The median age at death in the NDRDD was 35 for men and 34 for women. For Tayside, the mean age across both genders was 33.6 years.

4.1.4 Deprivation

In Scotland, over half of deaths occurred in areas that were most deprived (SIMD quintile 1) and in Tayside ¾ of deaths occurred in Dundee City, which has a higher proportion of deprived areas than either Angus or Perth and Kinross. A more detailed analysis of the socioeconomic distribution of drug deaths in Tayside will be undertaken in the 3-year report.

4.1.5 Living arrangements

The NDRDD reports that almost half of cases (195, 46.7%) were living alone, whereas cases on the Tayside database show that less than a third (30.6%) were living alone. In Tayside, most cases (69.4%) were living with others at the time of their death and usually had been doing so in the 6 months prior to death.

4.1.6 Relationship with children

National figures show that the majority of the deceased did not have children (259, 63.5% of those for whom this is recorded). In contrast, in Tayside the majority, (2/3) did have children (24 of 36 for whom this is recorded). In both datasets, only a minority of

individuals had children living with them. Nationally, there were 39 (9.3%) living with children under 16 years old at the time of their death. For the study population where recorded, a total of 254 children lost a parent or parental figure from a drug related death and 59 children were living with a person who had died a drug related death at the time of death. In Tayside, 7 drug deaths victims' children were living with them at the time of their death but information regarding how many children this involved, is not available locally. Details of where the children of the remaining 17 victims were living at the time of death are incomplete. This specific information does not appear to be routinely collected. In the police reports, it is often merely noted that the children were "living elsewhere".

Overall, the impression from NDRDD is that most of the deceased were socially isolated whereas in DDT, most seemed to have some social support or contact.

4.1.7 Employment Status

The employment status of the deceased at the time of death was most likely to be unemployed both nationally (296, 77.1%) and in Tayside (26, 83.9%).

4.1.8 Criminal Justice and Offending

Both nationally and in Tayside, about half of drug death victims had served a prison sentence (NDRDD 236, 55.4%, Tayside 18, 48.6%).

Of note is that nationally, 39, (16.5%) had died within 4 weeks of having been released from prison and in Tayside 3, (16.7%) had died within 2 weeks of having been released from prison.

Nationally, 148 people had been arrested in the six months prior to death and 15 in Tayside.

4.1.9 Psychiatric/Psychological Problems

A similar percentage of deaths both nationally (60%) and locally (62.2%) were known to have psychiatric or psychological problems. For both, depression was the most likely diagnosis, followed by anxiety then schizophrenia. Nationally, 136 of the 257 cases with psychiatric illness had 2 or more conditions.

Across both databases, around a quarter of those who died a drug death had attempted suicide or expressed suicidal ideation.

4.1.10 Physical health problems

NDRDD records 91.9% of cases having a medical problem and Tayside records 24.3% as having significant physical difficulties. There may be an issue with how problems are classified since NDRDD includes 275 cases where there was problematic alcohol use in medical history. In the Tayside database this is recorded separately, and 43.2% of individuals had severe problems with alcohol consumption. Hepatitis C was the next most common physical problem both nationally and in Tayside.

4.1.11 Significant life events

The majority had experienced significant life events. In the NDRDD, 55.1% had one or more significant life events in the 6 months prior to death and in Tayside, 81.1% had ever experienced significant adverse life events.

4.1.12 Substance misuse histories

The NDRDD showed that 376 (87%) people were recorded as being known to use illicit drugs. In Tayside, 36 (97.2%) of the 37 for whom records were available, were recorded as being known to use illicit drugs.

NDRDD reports that the majority had injected drugs for more than 5 years.

In both NDRDD and in Tayside, about half were known to have experienced at least one drug overdose prior to death. In the 6 months prior to death, 32.6% nationally and 18.9% in Tayside were known to have ever overdosed.

4.1.13 Service use histories

In the national report, 259 (60.1%) had ever been in contact with drug treatment services and in Tayside, 18 (43.2%) had been in contact with drug treatment services within the last 5 years. The NDRDD includes GPs who provide specialist drug treatment within “drug treatment services”.

Within the last 6 months prior to death, nationally, 168 (39.0%) had been in contact with drug treatment services and in Tayside 9 (28.9%) had been in contact within the 6 months prior to death. In Tayside, 10 individuals had received some form of pharmacological treatment for substance misuse in 6 months prior to death. Nationally, 91 cases were receiving a substitute prescription at time of death.

4.1.14 Circumstances of death

Death by the day of the week nationally, showed only slightly higher proportions on Saturday and Sunday whereas in Tayside, there was a more marked trend towards a weekend death.

At least one other person was present at the time of death in 271 (64.2%) of the nationally recorded deaths and in 29 (78.4%) of Tayside deaths. This higher proportion in Tayside is consistent with Tayside victims having more social contacts than recorded nationally.

Where a person was present at the time of death, a similar percentage attempted resuscitation nationally and locally with 69.4% and 65.5% respectively.

4.1.15 Toxicology results

Both nationally and locally, benzodiazepines, heroin/morphine, alcohol and methadone were the four most common substances detected and these substances were also in same order of frequency nationally and locally.

Most people died from a combination of drugs - a “cocktail” of substances was often taken prior to death.

4.1.16 Summary

Comparing the drug related deaths in NDRDD and the drug deaths in DDT, there were similar findings as regards, gender, age, ethnicity, living in a deprived area, unemployment status, ever served a prison sentence and recently released from prison and presence of psychiatric/psychological problems.

NDRDD recorded a higher proportion of people as suffering from physical problems, however alcohol related problems were included in physical problems nationally.

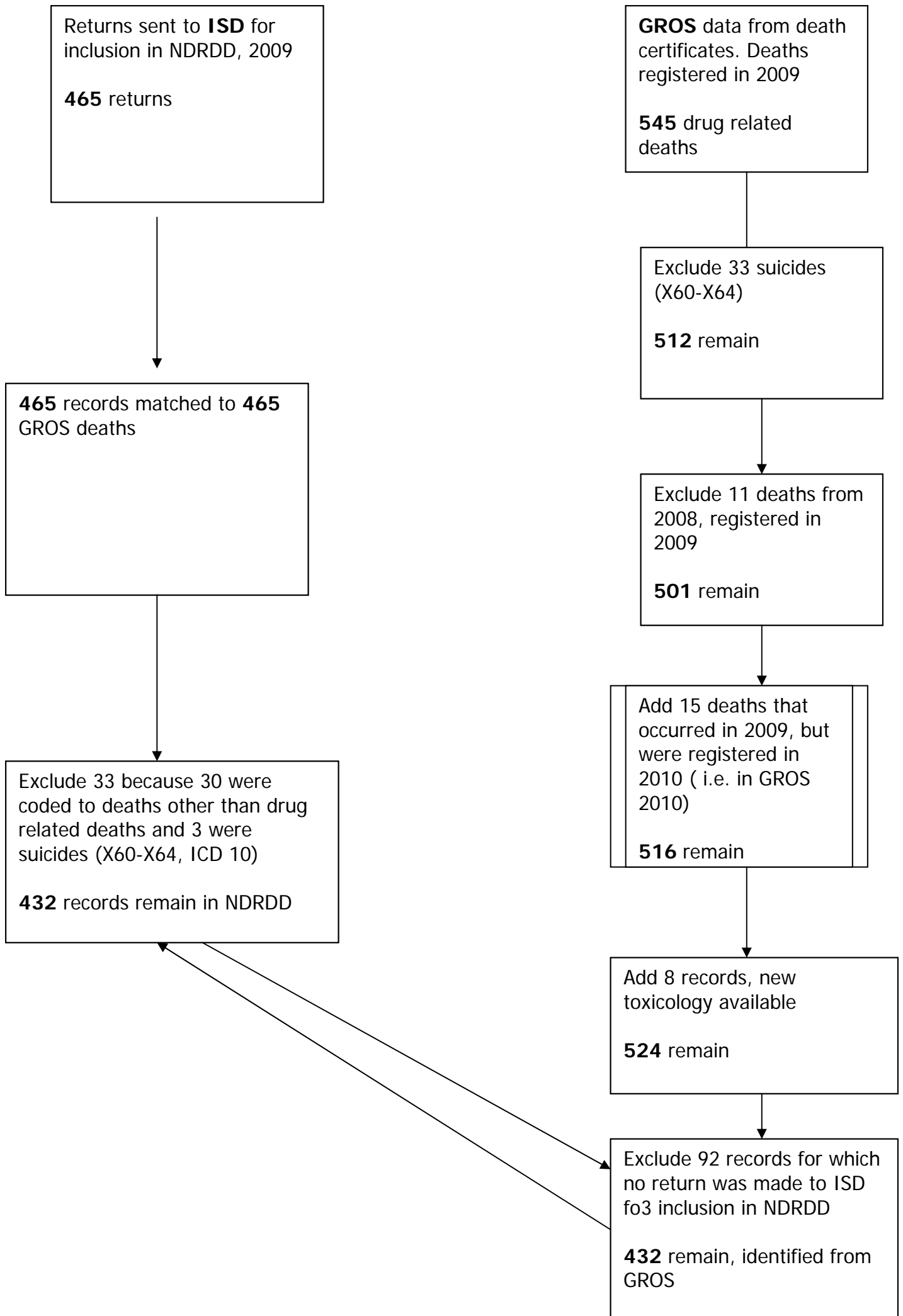
NDRDD victims were more likely to be socially isolated than in Tayside, perhaps because Dundee is a relatively small city.

There was a higher percentage of victims nationally who had contact with specialist drug treatment services at some time. It is difficult to tell if this is due to more severe drug problems or to differences in availability of/access to services.

Life events, including past and present abuse is recorded differently in the two databases and so is difficult to compare.

The report of the NDRDD is a statistical report that does not make recommendations. Recommendations for action at a national level are set out by the National Forum for Drug Related Deaths (NFDRD). The current recommendations are shown at Appendix D.

Figure: Data flow into national drug related deaths database



Section 5: Conclusions and Recommendations

Compared with 2009, drug deaths victims in Tayside in 2010 commenced using substances a year earlier, but progressed to polydrug use at a later age (21 years compared with 16 years). Those who died in 2010 were more likely to have died on a weekday, whereas those who died in 2009 were more likely to have died at the weekend.

In 2010, alcohol was less frequently reported to have been consumed immediately prior to death. Alcohol was also less likely to be reported in toxicology amongst 2010 drug deaths cases, as were anti-depressants. Methadone was involved in 25% of 2009 cases, and in 50% of 2010 cases. In 2009, 19.9% of victims were prescribed methadone at the time of their death: in 2010, the proportion was 30.3%.

Investigation showed that 57.6% of cases reported in 2010 died in the presence of others, compared with 78.4% in 2009. In 2009, 18.9% of cases had a record of an overdose in the 6 months prior to death: in 2010, the proportion was 30.3%.

In 2009 and 2010, similar proportions (>70%) of victims received no treatment for their drug problem in the 6 months prior to death

The rise in the proportion of deaths in which Methadone is involved may be due to increased access to substitute prescribing through the re-design of substance misuse services, and the impact of the HEAT A11 target for access to services. This trend will have to be monitored, and strong governance arrangements continued and developed for methadone prescribing and dispensing.

Recommendations

The action plan agreed by the 3 Tayside ADPs in 2011 addresses the key areas of concern identified in the Tayside annual drug deaths reports of 2009 and 2010 (see Appendix B). These fall into broad themes:

- Improve and extend data collection, in particular:
 - Improve recording of type of accommodation
 - Analysis of seized drugs
 - Improve information on the drug use career of service users
 - Use the 3-year report to analyse drug death hot spots and socioeconomic patterns of drug deaths
 - The exact timing and form of resuscitation attempted by bystanders
 - Identify possible separate risk factors in injecting and non-injecting drug users
- Improve the response to overdose
 - Overdose training for individuals who might provide support to drug users who overdose (eg family and friends)
 - Improve sharing of information particularly crisis events that may impact on overdose risk
 - Develop care pathways for varying levels of assessed overdose risk
 - Explore a formal means of identifying non-fatal overdoses in partnership with ambulance services

- Include within overdose education and training information on the risks of polydrug use
- Improve the identification and support offered for vulnerable individuals:
 - Early intervention in criminal justice settings
 - Improve the co-ordination of care for people with physical, psychological and substance misuse co-morbidities
 - Consider the potential of the Adult Vulnerability Act to improve care for vulnerable individuals
- Continue to improve treatment services, build recovery capital, and improve access to services
 - Examine the type and quality of relationships available to drug misusing people in the context of recovery
 - Identify rationale for prolonged and sustained methadone maintenance in individuals' care plans

Better identification and intervention of vulnerable children in early years enable resilience building and reduces risk of future substance misuse problems.

Following an initial overdose, he would have received information about local services that could help with his drug misuse. He may have made initial but unsustained contact with a local service. Following a second overdose resulting in his admission to A&E, he would be assessed by the substance misuse liaison nurse and may accept referral onto an overdose training session alongside a family member and partner.

Case Vignette: Impact of interventions to reduce the risk of drug death in Tayside

The average Drug Death victim from Tayside would be a White Caucasian 34 year old male who lived in Dundee. He would have started his substance misuse at the age of 15 years; around that time he would also have left school. He would have gained employment or started an apprenticeship. His childhood may have been disrupted; he might have had a family history of psychiatric difficulties and/or substance misuse. He may have suffered physical/sexual abuse and/or spent some time in care.

From the age of 16 years onwards, he would have proceeded to misuse a cocktail of drugs including cannabis, amphetamines, LSD and ecstasy. Approximately 4 years after leaving school he would have started taking heroin. He would have started injecting at around 21 years of age. He would have maintained meaningful and close relationships with his friends and family members throughout his life. He would have had children; however, they would not have lived with him and he would have lost custody of them.

He would have been known to at least 2 services, intermittently, including his GP, social work services and specialist substance misuse services in Tayside during the 5 years prior to his death. In this time he would have been misusing several types of substances including heroin and benzodiazepines (prescribed and/ or non-prescribed). He would also have encountered at least one complex episode of a co-morbid psychiatric or physical health problem.

He would also have experienced other adverse life events, such as bereavement and the loss of a close relationship. At some point in his life, he would have suffered a non-fatal drug overdose.

He would have criminal record and have served a prison sentence some point during his life.

During contacts with psychiatric services, his care needs in relation to substance misuse would be assessed alongside his mental health problems. As part of his care within mental health services, he will have participated in interventions to help him to address his alcohol and stimulant use.

During his term in prison, he will have received further overdose awareness, and including the use of take-home naloxone, provided on release. The prisoner release protocols connect him with community based drug treatment services.

He successfully engages with drug treatment services. Through a holistic assessment process, his needs in relation to blood borne virus, other physical illness, parenting and housing support are all addressed in assessment of his recovery capital.

Addressing other aspects of his health alongside his substance misuse problems motivates him to remain engaged with the services, and he stabilises on a methadone programme.

The death of his mother precipitates a relapse, and he suffers a further overdose.

The key worker visits within 48 hours to discuss next steps. He is transferred to a high intensity treatment service, and a recovery plan put in place.

The key worker has received basic level mental health training that allows her to incorporate approaches to managing his bereavement into then overall recovery plan.

His partner recognises the signs, administers naloxone and puts him in the recovery position before calling an ambulance. The ambulance service notifies his key worker of the overdose.

Appendix A

Drug Deaths Questionnaire: Enquiries and Monitoring Tayside

All respondents to complete this page, providing as much information as they hold.

Service: Title of service from which information is being provided

Date: Date of completion of questionnaire

Person completing: Please provide name, job title and a contact telephone number

Name and address of deceased: Include both forename and surname
If maiden name, or any aliases were known to be used by the deceased, please include these.
Address and postcode refers to the usual residence of deceased.
If homeless at time of death, please record as 'NFA' (no fixed abode)
If living in a hostel at time of death, please record name and address of hostel.
If in prison, please record usual home address in this section.

Postcode of deceased

CHI number of the deceased

Name of General Practitioner of deceased

Practice address:

Contents:

1. Demographic Characteristics

All respondents to complete this section, providing as much information as they hold.

2. Life Context and Social Functioning

All respondents to complete this section, providing as much information as they hold. Social Work and Substance Misuse services should provide most information in this section.

3. Criminal Justice Issues and Offending

Police, criminal justice and prison services should provide most information in this section
Substance misuse services should provide information for this section from client assessment

4. Substance Use History

Substance misuse services, statutory and voluntary, should provide most information in this section
Police, prison services or social work services may also provide information in this section.

5. Physical and Psychological Health

All respondents to complete this section, providing as much information as they hold. Social Work and Substance Misuse services should provide most information in this section.
GP records will provide further information in this section

6. Service Provisions

All respondents to complete this section, providing as much information as they hold.

7. Any Other Additional Information

All respondents to complete this section, providing as much information as they hold.

IF YOU ARE COMPLETING THE QUESTIONNAIRE ELECTRONICALLY, PLEASE INDICATE YOUR ANSWER BY CHANGING THE FONT COLOUR OF YOUR RESPONSE ITEM.

IF THE ANSWER TO A QUESTION IS UNKNOWN, PLEASE ENSURE THAT YOU INDICATE THIS CLEARLY TO AVOID THE DRUGS DEATH RESEARCH TEAM HAVING TO FOLLOW UP UNANSWERED QUESTIONS

1. DEMOGRAPHIC CHARACTERISTICS

Q	Questions	Codes	Core Data
1.1	Date of Birth	Day Month Year	<input type="text"/>
1.2	Gender	Male 1 Female 2	<input type="text"/>
1.3	Race/Ethnicity	White: Scottish 00 Other British 01 Irish 02 Polish 03 Any other white background 04 Black: Caribbean 05 African 06 Any other Black background 07 Asian: Indian 08 Pakistani 09 Bangladeshi 10 Chinese 11 Any other Asian background 12 Mixed: Any mixed background 13 Other 14	<input type="text"/>

Location and Circumstances of death			
1.5	Date of death	Day of week	Time life pronounced extinct
1.6	What was the person's place of death? Indicate the type of premises where the death occurred. If 'other', please specify in space provided	Own home /Rented Temporary/Unstable accommodation Supported Accommodation Workplace Licensed Premises Open Space Hospital Prison Police Custody Other (specify)	01 02 03 04 05 06 07 08 09
1.7	What was the postcode of the place of death (leave blank if open space or unknown)		
1.8	Description of Neighbourhood Provide a description of the place of death in terms of retail/business or residential AND in terms of urban or rural location	Retail/Business Residential and Urban Rural	01 02 01 02

2. LIFE CONTEXT AND SOCIAL FUNCTIONING

2.1	<p>What was the person's accommodation in the last 6 months before death? (Can choose more than one)</p> <p>Indicate what type of accommodation was used by the deceased</p>	<p>Own home /Rented Temporary/Unstable accommodation Supported Accommodation Residential Rehab In Prison Roofless Unknown Other (please specify).....</p>	<p>01 02 03 04 05 06 07 08</p>
2.2	<p>What was the person's living arrangements in the last 6 months before death? (Can choose more than one)</p> <p>Indicate who the deceased lived with in the 6 months before death. If living arrangements changed within this time period, please provide details in section 7</p>	<p>Living alone With spouse/partner With friends With parents With relatives Unknown Other (please specify).....</p>	<p>01 02 03 04 05 06 07</p>
2.3	At what age did the person leave school?	Years ____	
2.4	What did the person do just after leaving school?	<p>Further Education Employed Vocational Training/ Apprentice Unemployed Unknown</p>	<p>01 02 03 04 05</p>
2.5	Did the person have a place on a training or educational course at the time of their death?	<p>Yes No Unknown</p>	<p>01 02 03</p>

2.6	What was the person's main source of income during the last 6 months? (Can choose more than one)	Employed with a regular salary Unemployed with regular unemployment/sickness benefit Unemployed but with no regular state income Temporary work Benefit fraud Partner or relative's income Self-employed Illegal income Unknown Other (please specify).....	01 02 03 04 05 06 07 08 09 10 11
2.7	What was the person's marital situation at the time of his/her death? Please use the 'single' category if there had been no known sustained relationship	Married/Civil Partner/Co-habiting Divorced/Dissolved Civil Partnership Separated Single Widowed/Surviving Civil Partner Unknown Other (please specify).....	01 02 03 04 05 06 07
2.8	Did the person have any children aged under 16 years?	Yes No (Go to 2.11) Unknown	01 02 03
2.9	If yes, please indicate how many children aged under 16 years were: Please insert in the brackets the number of children in each category	Living with the person (.....) Living elsewhere (.....) In care (.....) Deceased (.....) Unknown (.....)	01 02 03 04 05
2.10	If yes, what is the parents' marital status? Please give the marital	Married/Co-habiting Separated Divorced Widowed/co-habiting	01 02 03

	status of the parents of the children. Please use the 'single parent' term where there has been no sustained relationship between the parents. Where there is more than one child, if more than one parental relationship applies please give details in section 7.	partner deceased Single parent Unknown	05 06 04
2.11	Did the person have any relatives that he/she felt close to?	Yes No (Go to 2.13) Unknown	01 02 03
2.12	What was the relationship? (e.g. mother, brother etc)		
2.13	Did the person have any friends that he/she felt close to?	Yes No Unknown	01 02 03
2.14	Is there evidence to suggest that there were any difficulties in the person's relationship(s) with their friend(s), relative(s) or partner?	Yes No (go to 2.16) Unknown	01 02 03
2.15	If yes, give details.		
2.16	Is there evidence to suggest that the person's partner had a drug or alcohol problem?	Yes No (Go to 2.18) No partner (Go to 2.18) Unknown (Go to 2.18)	01 02 03 04
2.17	If yes, give details.		

2.18	Was the person alone at the time of their death? If others were present at the time of death, please specify who was present in question 2.19	Yes No Unknown	01 02 03
2.19	Who was present?		
2.20	Was the person known to be snoring prior to their death?	Yes No Unknown	01 02 03
2.21	Was alcohol involved/found?	Yes No Unknown	
2.22	Did an ambulance attend the scene ?	Yes No Unknown	
2.23	Was CPR attempted by witnesses ?	Yes No Unknown	01 02 03

3. CRIMINAL JUSTICE ISSUES AND OFFENDING

3.1	Arrest and conviction history		
Q	Questions	Codes	Core Data
3.1.1	Has the person ever been arrested?	Yes 01 No (go to section 4) 02 Unknown 03	
3.1.2	If "yes", in last 12 months? If 'yes', please insert number of arrests in brackets	Yes (....) 01 No (go to section 4) 02 Unknown 03	
3.1.3	If "yes", was the alleged offence(s) drug related? Please insert in the appropriate brackets the number of drug related arrests, non-drug related arrest and the number of unknowns.	Drug related () 01 Non-drug related () 02 Unknown () 03	
3.1.4	Has the person ever been convicted?	Yes 01 No 02 Unknown 03	
3.1.5	If 'yes' what is the SCRO/PNC number?	Number:	
3.1.6	What was the date of the last SER? What was the offence?	Date:.....	

3.1.7	In the last 12 months, has the person been on a Diversion from Prosecution Scheme?	<p>Yes 01 No 02 Unknown 03</p> <p>If Yes, please provide dates of scheme</p>	
3.1.8	In the last 12 months, has the person been on a Community Service Order?	<p>Yes 01 No 02 Unknown 03</p> <p>If Yes, please provide dates of order</p> <p>.....</p>	
3.1.9	In the last 12 months, has the person been subject to DTTO?	<p>Yes 01 No 02 Unknown 03</p> <p>If Yes, please provide dates of order</p> <p>.....</p>	
3.1.10	In the last 12 months, has the person been subject to a Probation Order?	<p>Yes 01 No 02 Unknown 03</p> <p>If Yes, please provide dates of order</p> <p>.....</p>	
3.1.11	In the last 12 months, has the person been subject to a Probation Order with a condition of unpaid work?	<p>Yes 01 No 02 Unknown 03</p> <p>If Yes, please provide dates of order</p> <p>.....</p>	
3.1.12	In the last 12 months, has the person been subject to a Restriction of Liberty Order?	<p>Yes 01 No 02 Unknown 03</p> <p>If Yes, please provide dates of order</p> <p>.....</p>	

3.1.13	In the last 12 months, has the person been subject to a Supervised Attendance Order?	<div> <div>Yes 01</div> <div>No 02</div> <div>Unknown 03</div> </div> <div> If Yes, please provide dates of order </div>	
3.1.14	Has the person ever been in prison?	<div> <div>Yes 01</div> <div>No 02</div> <div>Unknown 03</div> </div>	
3.1.15	If "yes", how many times in the last 12 months?		
3.1.16	What are the dates of the prison sentences in the last 12 months?	<div>From____To____</div> <div>From____To____</div> <div>From____To____</div>	
3.1.17	Were there any serious outstanding charges or court cases at time of death?	<div> <div>Yes 01</div> <div>No 02</div> <div>Unknown 03</div> </div>	
3.1.18	If "yes", give details		

3.2	Circumstances and scene of death For completion by police/Scene of crime officers		
3.2.1	Drugs suspected This refers to drugs suspected to have been taken in the time leading up to death. This may be determined from witnesses, from known patterns of substance use, or from drugs and paraphernalia found at the place of death.	Heroin/Morphine Methadone Suboxone Buprenorphine Alcohol Diazepam Temazepam Cocaine Cannabis Ecstasy/MDMA Amphetamines Volatile substances Dihydrocodeine Other (please specify)	01 02 03 04 05 06 07 08 09 10 11 12 13
3.2.2	Drugs confirmed This refers to drugs confirmed by toxicology as being present within the body of the deceased. Please add at section 7 any information on levels of drugs as determined by toxicology.	Heroin/Morphine Methadone Suboxone Buprenorphine Alcohol Diazepam Temazepam Cocaine Cannabis Ecstasy/MDMA Amphetamines Volatile substances Dihydrocodeine Other (please specify)	01 02 03 04 05 06 07 08 09 10 11 12 13

3.2.3	Form of drug This refers to the form of drugs suspected to have been taken in the time leading up to death. This may be determined from witnesses, from known patterns of substance use, or from drugs and paraphernalia found at the place of death	Powder Tablet Liquid Resin Gas Other Unknown	01 02 03 04 05 06 07
3.2.4	Method of ingestion This may be determined from witnesses, from known patterns of substance use, or from drugs and paraphernalia found at place of death	Injection Oral Inhaled Snorted Smoked Other Unknown	01 02 03 04 05 06 07

3.2.5	Items found at scene of death		
3.2.5.1	Syringe found at scene	Yes No	01 02
3.2.5.2	Site of injection if applicable	Specify_____	
3.2.5.3	Drugs found at scene	Specify_____	
3.2.5.4	Drug use paraphernalia found at scene	Specify.....	

3.2.6	Any information on source of drugs?	Yes No	01 02
3.2.7	Any person charged?	Yes No	01 02
3.2.8	Charge details	Culpable Homicide Misuse of drugs Other	01 02 03
3.2.9	Crime/Case no		
3.2.10	Officer in charge		
3.2.11	PF Area		
3.2.12	Force		

3.3	Any additional documents available Circle/highlight as appropriate Police to complete this section Date provided to be completed by drug deaths analysis team	
Sudden death report	Date provided:	
Crime report	Date provided:	
Intelligence report (if applicable)	Date provided:	
Toxicology report (if applicable)	Date provided:	
Photographs (if available)	Date provided:	

4. SUBSTANCE USE HISTORY For completion by substance misuse services, or by police, prison services or social work where information held.

4.1 Drug career

Age that started misusing drugs	
Drug Career and other relevant information	
<p>In this section, please summarise information on drug career of deceased. Please include information on what drugs first used, when the deceased started to inject (if applicable), concurrent use of alcohol, any health problems arising from substance use behaviour, including blood borne virus and other infections.</p>	

4.2 Drugs used in last 6 months prior to the death

Please indicate against each drug the usual frequency, the amount of each drug used, and the route of use for each time period (last week, last 30 days, last 6 months)

Please indicate if the drug used was prescribed, illicit or a mixture of prescribed and illicit

Code	Drug	Frequency/ amount used in the last week	Usual route	Frequency/ amount used in previous 30 days	Usual route	Frequency/ amount used in the last 6 months	Usual route	Source
A	Heroin							Prescribed Illicit Both
B	Methadone							Prescribed Illicit Both
C	Dihydrocodeine							Prescribed Illicit Both
D	Other opioid (1)							Prescribed Illicit Both
E	Other opioid (2)							Prescribed Illicit Both

F	Diazepam							Prescribed Illicit Both
G	Temazepam							Prescribed Illicit Both
H	Other benzodiazepine							Prescribed Illicit Both
I	Alcohol							
J	Cocaine (powder)							
K	Crack							
L	Amphetamines							
M	LSD							
N	MDMA (etc)							
O	Cannabis							
P	Tobacco							
Q	Other e.g. cyclizine, ecstasy							Prescribed Illicit Both

4.3 Methadone/other replacement prescribing in the last 6 months:

Q.	Questions	Codes	Core Data	Source						
4.3.1	Did the person receive medical treatment for a drug problem over the last 6 months? This includes replacement prescribing and detoxification	Yes 01 No (Go to section 4.4) 02 Don't know 03								
4.3.2	If "yes", what had the person been prescribed? If the person underwent detoxification, please include as 'other' and give details in section 7.	Methadone 01 Suboxone 02 Buprenorphine 03 Other (please specify).....04								
4.3.3	If "yes", what date did the prescription begin? If there have been several periods of medical treatment, please give the date when the most recent period of medical treatment began.	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>								
4.3.4	Was the person still taking Methadone/other when death occurred?	Yes 01 No 02 Don't know 03								
4.3.5	If "no", what date did the prescription end?	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>								
4.3.6	If "no", what was the reason why the prescription ended? For example, because of continued illicit use, failure to collect prescription, failure to attend review appointments.									

4.3.7	How did the person collect and consume their Methadone/other?		
	Method of consumption	In the last 6 months	In the week prior to death
4.3.7.1	Collection from Pharmacy – Supervised consumption on premises	Yes 01 No 02 Unknown 03	Yes 01 No 02 Unknown 03
4.3.7.2	Collection from Pharmacy – Consumption at home.	Yes 01 No 02 Unknown 03	Yes 01 No 02 Unknown 03
4.3.7.3	Collection from Pharmacy – Supervised consumption normally, but on short term home consumption e.g. for holiday, or changed in between normal review appointments	Yes 01 No 02 Unknown 03	Yes 01 No 02 Unknown 03

4.3.8	How often did the person collect their Methadone/other? Please provide information on all Methadone collection patterns in 6 months prior to death, noting duration of each collection pattern.			
	Frequency	Week prior to death (please select one by ticking box)	In the last six months (Can select more than one and indicate duration in next column)	No. of weeks
4.3.8.1	Daily (including Sunday)		Yes 01 No 02 Unknown 03	
4.3.8.2	Six days a week		Yes 01 No 02 Unknown 03	
4.3.8.3	3 times a week		Yes 01 No 02 Unknown 03	

4.3.8.4	Once a week		Yes 01 No 02 Unknown 03	
4.3.8.5	Every two weeks		Yes 01 No 02 Unknown 03	
4.3.8.6	Other (Specify)	Please indicate here if not on Methadone at time of death		

4.3.9	Methadone/other prescription at death Please provide information on the LAST KNOWN Methadone prescription prior to death		
	Questions	Dose/Duration	Core Data
4.3.9.1	What was the last dose of Methadone/other replacement prescribing before death? (<i>mg/day</i>)		
4.3.9.2	How long had the person been on this dose?		
4.3.9.3	In what form did the person take his/her Methadone/other?	Liquid mixture 01 Liquid linctus 02 Tablets 03 Injectable 04	

4.4 Injecting Behaviour

No.	Questions and filters	Coding categories	Core Data
4.71	Has the person ever injected?	Yes 01 No (If no go to 4.81) 02 Unknown 03	
4.72	Age first injected? (yrs)		
4.73	Was harm reduction information provided to the person in the last 6 months?	Yes 01 No 02 Unknown 03	

4.74	Harm reduction action taken:	Needle exchange (Pharmacy) 01 Needle exchange (specialist service) 02 Wound management 03 BBV testing 04 BBV prevention advice 05 BBV vaccination 06 For BBV vaccination, please state where vaccinated.....	
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4.5 Overdose History

No.	Questions and filters	Coding categories	Core Data
4.5.1	Had the person ever had a drug overdose? Do not include the overdose that led to death Include deliberate and accidental overdoses of illicit and licit drugs, including prescription or over the counter drugs (such as paracetamol)	Yes 01 No (Skip to section 5) 02 Don't know 03	
4.5.2	If "yes", please enter in brackets the number of accidental and deliberate overdoses during the person's lifetime. Do not include the overdose that led to death	Accidental (....) 01 Deliberate (....) 02 Unknown (....) 03	
4.5.3	How many times in the last 6 months before death? Do not include the overdose that led to death	Accidental (....) 01 Deliberate (....) 02 Unknown (....) 03	

4.5.4	<p>What was the date of the last occasion?</p> <p>Please give the date of the most recent overdose, prior to the overdose leading to death</p>	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	
4.5.5	<p>Was the last Occasion:</p> <p>Please circle/highlight the nature of the overdose event referred to in 4.5*</p>	<p>Accidental 01</p> <p>Deliberate 02</p> <p>Unknown 03</p>	
4.5.6	<p>Is there any indication that this death was suicide?</p> <p>If Yes, please add additional information in box in section 7</p>	<p>Yes 01 (<i>please comment in section 7</i>)</p> <p>No 02</p> <p>Unknown 03</p>	
4.5.7	<p>Had the person received overdose awareness training?</p> <p>This may have been as part of routine appointments, or as specific overdose awareness training sessions</p>	<p>Yes</p> <p>No</p> <p>Unknown</p>	

5. PHYSICAL AND PSYCHOLOGICAL HEALTH

Please complete question 5.1 to 5.8, and add details of any significant events in box 5.9. If available, please provide dates of any significant events noted-full information on dates of significant events allows important anniversaries to be identified.

No.	Questions and filters	Coding categories	Core Data
5.2	Has a serious illness, injury or assault happened to close relative?	Yes 01 No 02 Unknown 03	
5.3	Has the person suffered bereavement?	Yes 01 No 02 Unknown 03	
5.4	Has the person had a separation due to marital difficulties or broken off a steady relationship?	Yes 01 No 02 Unknown 03	
5.5	Has the person had a serious problem with a close friend, neighbour or relative?	Yes 01 No 02 Unknown 03	
5.6	Has the person had any child custody issues	Yes 01 No 02 Unknown 03	
5.7	Has a psychiatric illness presented for the first time?	Yes 01 No 02 Unknown 03	
5.8	Has a physical illness presented for the first time e.g. cancer?	Yes 01 No 02 Unknown 03	

5.9	Please provide as much information as possible on any significant event, which has happened to the person in their life?

6. SERVICE UTILISATION

6.1 Services used by client in the past 5 years

All services, please provide referral, assessment and discharge dates. If still a client at time of death, please note this against discharge section. Please record dates when a client was placed on a waiting list.

If referred or assessed on more than one occasion, please complete for each episode. If more than 4 referral episode, please continue in Section 7.

	Referral episode 1	Referral episode 2	Referral episode 3	Referral episode 4
Service Provider:				
Date of referral:				
Date assessed				
Date placed on waiting list (Please enter N/A if not placed on waiting list)				
Date reviewed/seen from waiting list				
Date of discharge Please include in the box any further information on the reason for discharge (eg completed treatment, self-discharge, discharged due to ongoing illicit drug use, discharged following non-attendance).				

6.2 Service utilisation in 6 months prior to death

Any service that had contact with client in 6 months prior to death, please provide details of each contact in this section. Please note if contact was for assessment, treatment, prescribing, harm reduction etc.

Service to complete this section may include health (including mental health) services, alcohol problems treatment services, social care services, housing services, criminal justice services or any other relevant service.

Substance misuse services, please provide details of all contacts, including assessment, prescribing, harm reduction, detoxification etc.

6.2 Service Provider	Month 1 (<i>Month of death</i>)	Month 2	Month 3	Month 4	Month 5	Month 6

7. ADDITIONAL INFORMATION FROM ANY SECTION AND OPINION

Please provide any additional information you think may be relevant in this case, including for example personal or social history, mental or physical health issues, circumstances of death, signposting to services etc.

Acknowledgements:

1. Centre for Addiction Research and Education Scotland (CARES), University of Dundee: 2006
2. Scottish Drug Enforcement Agency, National Drugs Death Database: 2006

Version 2.0

RESTRICTED WHEN COMPLETE

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Appendix B: Tayside Drug Deaths Working Group (DDWG)-Partnership Action Plan and recommendations, 2011/12

Actions to be progressed by Tayside Drug Deaths Working Group							
Key Recommendation	Proposed action	Outcome/output measures	Policy/Strategic overlaps	Lead Responsibility	Named contact	Date for completion	Status
Deliver Overdose (OD) Prevention training to service users, carers and professionals	Revise the Tayside Overdose Prevention strategy as a training and awareness plan to incorporate: <ul style="list-style-type: none"> • Work with SDF to develop, deliver and monitor OD prevention training-for-trainers to staff from relevant agencies and settings • Ensure training is cascaded to service users and carers • Raise awareness of the risks of overdose and appropriate responses through use of targeted resources 	Issue of revised training and awareness plan	Short term prisoners' protocol	Tayside ADPs support Staff/ Overdose Prevention sub-group/SDF	Vered Hopkins	April 2011	
		Database of trainers to be established	Tayside Homelessness Strategies			March 2011	
		Training programme developed for 2011/12	Substance Misuse workforce development strategy			April 2011	
		Maintain records of training delivered				Ongoing	
		Quarterly reporting to DDWG on training delivery	Commitment 13 action plan			Quarterly	
		Agree a set of resources for different groups and settings and distribute appropriately				Oct 2011	

Actions to be progressed by Tayside Drug Deaths Working Group

Key Recommendation	Proposed action	Outcome/output measures	Policy/Strategic overlaps	Lead Responsibility	Named contact	Date for completion	Status
Implement the Scottish Government's take-home naloxone policy at a local level	Establish a steering group to implement, taking account of further instructions from Scottish Government regarding: <ul style="list-style-type: none"> Funding mechanisms Identification of high risk individuals Training for service users Information we need to collect 	Number of people trained in use of take home naloxone Number of take home naloxone kits issued and used Reports of use of take home naloxone Adverse events reported Number of drug deaths	Prison take home naloxone pilot	Take home naloxone steering group (to be established) SDF ADPs	Karen Melville	Steering group meets 31 st Jan. Agree timescale thereafter	
Information regarding non-fatal overdoses is shared appropriately in order to facilitate delivery of support, advice and signposting to services as indicated	Explore appropriate ways to use information on non-fatal overdoses to encourage individuals to access treatment (tiered approach)	Substance Misuse Service information cards (opt in only) to be distributed by agencies attending non-fatal overdoses Further recommendations on tiered approach to go to HAF and ADPs	Tayside Homelessness Strategies SUMIT	Tayside Drug Deaths Working Group	Kirsty Licence	August 2011	

Actions to be progressed by Tayside Drug Deaths Working Group							
Key Recommendation	Proposed action	Outcome/output measures	Policy/Strategic overlaps	Lead Responsibility	Named contact	Date for completion	Status
Undertake work to investigate diversion of prescribed medicines across Tayside	Work with police, pharmacy, public health and others to investigate the extent and patterns of diversion of prescribed medicines.	Report to be taken to relevant groups		Tayside Drug Deaths Working Group	Wendy Symington (TBC)	January 2012	
Improve the quality and comprehensiveness of information available for analysis by the Tayside DRD Review Group	<p>Feedback annually to stakeholders the findings and recommendations from the review process</p> <p>Review the content and layout of the drug deaths questionnaire annually, taking account of feedback from stakeholders</p> <p>Monitor completion rates for cases 8 weeks after notification</p> <p>Update ADPs throughout year on current picture and emerging findings</p>			Tayside Drug Deaths Working Group	Caroline Snowdon	<p>May 2012</p> <p>Dec 2011</p> <p>Ongoing</p> <p>Quarterly</p>	
Share learning with other similar local case review groups	Build links with Tayside serious adverse incident review group-attend relevant reviews and develop agreement for review of 'shared' cases.			Tayside Drug Deaths Working Group	Kirsty Licence	Ongoing	

Actions to be progressed by Tayside Drug Deaths Working Group

Key Recommendation	Proposed action	Outcome/output measures	Policy/Strategic overlaps	Lead Responsibility	Named contact	Date for completion	Status
Support the national discussion between Forensic Pathologist to standardise the reporting of causes of DRD	Establish regional (ECSAS) membership of NFDRD	Monitor and report back progress with recommendations of NFDRD workplan in relation to this		ECSAS MCN drug deaths sub-group	Kirsty Licence	Dec 2011	

Strategic Recommendations for Tayside ADPs and other Strategic Partnerships

Following the annual report and the analysis of the information within the report, the working group would like to outline the following recommendations for action by the Tayside ADPs and their partners:

The group recommends that the following 2 actions should be given priority for the coming year:

1. Improve the care of people with co-existing substance misuse and mental health problems: implement the Commitment 13 Action Plan
2. Ensure that homeless / temporary accommodation services address issues of substance misuse. This action should focus on
 - assessing the needs of chaotic drug users within homeless hostels
 - reviewing current service specifications for Homeless Health Outreach services
 - reviewing the referral and liaison with TSMS and mental health services

Additional recommendations made by the DD working group include:

3. Improve identification, assessment and intervention for vulnerable children and young people affected by parental or own substance misuse. The focus for this action should be support early years interventions.
4. Support the continuing provision of early interventions within Criminal Justice Services. Actions should include:
 - Review the procedures for the ongoing care of prisoners who have received only detoxification in prison
 - Review the framing of Social Enquiry Reports and associated recommendations to courts
5. Promote holistic assessment (including available social supports and the quality of these supports, significant life-events and physical/ psychological co-morbidities) in line with the principles of 'Recovery'.
6. Develop improved information systems (for TSMS and all other specialist services) that facilitate comprehensive assessment process and linkages with other systems.
This action will be taken forward through the SUMIT project

Operational Recommendations for Tayside ADPs and front-line services (TSMS, primary care, A&E,others)

1. Improve overdose risk assessment and management for service users. Key action: pilot the use of the Fife overdose risk assessment and management process

2. Support universal services to appropriately manage substance misuse issues alongside other health problems. Key actions:
 - development and dissemination of guidance for management of substance misuse problems within acute settings
 - review enhanced service agreement with primary care for provision of substance misuse services
 - Improve the A&E response to accidental overdose through development of substance misuse liaison services
3. Facilitate client engagement and retention in services. Adopt evidence based approaches to enhance engagement and retention (e.g. NTA guidance 'Towards successful treatment completion')
4. Develop stronger joint working between alcohol misuse and drug misuse services. Key action: support workforce development and training to ensure staff confident to assess, manage and if necessary refer clients with mixed substance misuse problems
5. Continue improvements in prescribing practice and medicines management for substance misusers. Key actions:
 - encourage dispensing pharmacies to participate in Methadone database and keep under review new dispensing technologies
 - encourage robust medicines management with pharmacist input for all substance misusers
 - provide additional information/awareness raising on pain control, the management of depression, interactions between opiate substitutes and other medicines, and the risks of benzodiazepine prescribing

APPENDIX C – Tayside ADP Directory of Services

When informed of a suspected drug death, the Tayside Drug Deaths Co-ordinator contacts the following services to enquire whether the person was known to any specialist drug services:

Angus Council includes Children's Services, Criminal Justice, Housing and the Alcohol & Drug BBV Team

Addaction – Dundee Direct Access Service

Axis Forward Project

Dundee City Council includes Children's Services, Criminal Justice, Housing and the Drug & Alcohol Social Work Team

Eclips

Eclips Lite

New Beginnings

Perth & Kinross Council includes Children's Services, Criminal Justice, Housing and the Drug & Alcohol Social Work Team

Provision of Forensic Medicine and Healthcare in Police Custody settings

Salvation Army

SPS Enhanced Addiction Casework Service (delivered by Phoenix Futures)

Tayside Arrest Referral Scheme

Tayside Substance Misuse Service

The Cairn Centre Harm Reduction and Needle Exchange Service

Appendix D: National Forum on Drug Related Deaths in Scotland: Annual Report 2009-10

SUMMARY OF RECOMMENDATIONS

Recommendation 1

GROS include a table in the annual drug related deaths figures that reflects deaths from 'some causes which may be associated with present or past drug misuse';

that in the coming year, this includes detail on deaths caused by Hepatitis C and HIV; and

that the Forum and GROS explore the possibility of including violence, trauma and road traffic accidents.

Recommendation 2

'Take home' naloxone should be available to all high risk individuals on release from custody later this year. This programme should be underpinned by a detailed evaluation which builds on data already held by SPS for the three years preceding the implementation date.

This should be supported by increased availability of 'take home' naloxone through specialist and primary care services and the Forum encourages the development of local 'take home' naloxone programmes where this is not already in place.

Recommendation 3

Throughcare Addiction Service (TAS) should be developed in all areas. The Scottish Government review of TAS should consider how to support the development of information sharing processes between the TAS and the Enhanced Addiction Casework Services (EACS) in order to share vital feedback regarding client attendance at community appointments following release from custody.

Recommendation 4

Pathology departments should arrive at common standards of sampling, laboratory testing and interpretation of results. Testing in forensic laboratories should include a standard range of substances and, in particular, buprenorphine should be routinely tested for in fatal cases.

Recommendation 5

There should be an urgent review of the capacity and suitability of the Enhanced Service Contract as the main mechanism for supporting GPs in taking drug treatment work forwards. Providing access to treatments for drug related problems (of all types) is an essential service and negotiations between Scottish Government Health Directorates and GP representatives should work towards including drug services in the framework of core GMS services.

Recommendation 6

Prescribing services should focus on increasing uptake of prevention interventions, including the increased use of buprenorphine maintenance prescribing in chronic opiate dependent patients. Prescribing services should also focus on engaging with hard to reach groups within the drug using population. This could most effectively be achieved by upskilling agencies already working with these groups in drug treatment.

Recommendation 7

The Scottish Government should respond to recent publications on the subjects of heroin prescribing and the provision of consumption rooms to allow the forum to proceed with investigating these possibilities in Scotland.

Recommendation 8

Health Boards and Social work services should collaborate to develop comprehensive care packages for older drug users coming into contact with services, taking specific account of issues of isolation when planning and delivering services for this group. Services for older drug users should place greater emphasis on forming meaningful therapeutic relationships as these are particularly important for this age group.

Consideration should also be given to the support required by General Practitioners and primary care services providing support to homeless or other marginalised groups to enable them to best meet the needs of older drug users.

Recommendation 9

Co-operation, liaison and joint working between drug and alcohol services should be enhanced. Alcohol and Drug Partnerships should lead the development of appropriate multiagency interventions, including strategies for joint working and joint funding of projects. These should involve all key partners including Health Boards, social work services, emergency services and the voluntary sector.

Recommendation 10

All services in contact with people with substance misuse problems should consider how best they can support the families and carers of people with substance misuse problems. Special consideration should be given to supporting the families and carers following bereavement from a drug related death. Support should be provided, in a coordinated way, proactively by all agencies and may be required for prolonged periods.

A variety of technical advice should be available to allow families to negotiate the complex legal and organisational issues as easily as possible. A national protocol or guidance document would help in this area of service provision.